Abstract

This paper argues that asynchronous discussion is a tool that fits well with middle school philosophy and purposes. This argument is advanced through the development of specific connections between the essential nature of middle schools and the educational use of asynchronous discussion. While the main goal of this article is to advance theoretical connections between the use of asynchronous discussion and middle school philosophy, the authors offer advice for designing asynchronous discussion activities in ways that are congruent with middle school philosophy and purposes.

Introduction

Electronic bulletin boards and e-mail allow students and teachers to exchange ideas even when they are separated by distance and time (Morrison & Guenther, 2000; Berge, 1999). Such exchanges—commonly called asynchronous discussion—are common in education; literature documents the educational use of asynchronous discussion in science (cf., Hoadley & Linn, 2000), language arts (cf., Grisham & Wolsey, 2003; Wolsey, 2004), and math (cf., Li, 2003). Asynchronous discussion is now common in higher education, and it has been proposed as a viable tool in secondary schools (cf., Knowlton & Knowlton, 2001). Can it be used effectively in middle schools? Is it appropriate given a middle school curriculum, the level of adolescent cognitive development, and other characteristics of education within middle schools? We argue that it is
appropriate. In fact, in this paper, we advance the theoretical argument that asynchronous discussion can support some of the very goals that underlie middle school philosophy and some of the characteristics of middle schools. We begin this paper by noting that the use of asynchronous discussion is congruent with some of the characteristics and goals of middle schools. This paper appears to be the first that advances the notion of a direct congruence between asynchronous discussion and middle school philosophy and concepts; the theoretical discussion in itself, then, is substantive. However, to show that the theoretical ideas presented in this first part of this paper can be implemented, we offer some practical advice for middle school teachers who may wish to use asynchronous discussion.

**Congruence between Middle Schools and the Use of Asynchronous Discussion**

The middle school movement has been declared “one of the largest and most comprehensive efforts at educational reorganization in the history of American public schooling” (George & Oldaker, 2003, p. 1). Middle schools were created to provide a program specifically designed for young adolescents and to set up a more effective transition between elementary and high school. Good middle schools incorporate block scheduling, use teaching teams, promote interdisciplinary thematic units, and meet the developmental needs of adolescents (Ediger, 1998/1999; Kellough & Kellough, 2003). In this section, we provide an overview of these characteristics and describe how asynchronous discussion fits well within these middle school concepts. We attempt to support this fit with already-existing literature. Importantly, though, this article appears to be the first to argue a direct congruence between middle school philosophy and the use of asynchronous discussion. Therefore, our connections often are supported only by our perspectives as a middle school teacher and a faculty member who teach preservice and inservice teachers.

**Block Scheduling**

Many middle schools use block scheduling to give teachers a common planning time, allow for schedule flexibility, and maximize learning (Kellough & Kellough, 1996). Block scheduling allows teachers to replace the traditional structure of fifty-minute-long classes with longer and more flexible blocks. Sometimes these blocks are standardized across the school, such as classes meeting every other day for eighty minutes; but other times, individual teams of teachers can determine longer “blocks” of time by combining classes and using cross-class groupings of students. There is some connection between block scheduling and gains in learning. For example, block scheduling allows students to explore
We believe that the sound use of asynchronous discussion can support the purposes of block scheduling. There are two ways that asynchronous discussion can enhance block scheduling. The first way is by offering a communication forum for students and teachers on days that they may not meet face-to-face. Though block scheduling extends class sessions for longer amounts of time, students may only meet for each class on every other day. Because students may go longer periods of time not seeing their teacher and their classmates, asynchronous discussion can serve as a useful tool for enhancing communication among students and with teachers on days where class does not meet. In some instances, the use of asynchronous discussion outside of the classroom actually increased student participation while inside the classroom (Caswell, 2001).

The second way that asynchronous discussion can enhance block scheduling is by allowing students to work independently during longer class sessions. Because block scheduling results in longer class sessions, teachers may need to use some class time for independent work. If students are engaged in a variety of activities, they will not all be available for collaborative work. Some students may use some of the “independent time” to leave messages for their classmates and questions for their teacher. Thus, asynchronous discussion makes class time even more flexible because it allows collaborative work to occur even when an entire student collaborative team is not available. Caswell (2001) seems to support our perspective by noting that asynchronous bulletin boards sometimes make it easier for teachers to answer student questions in a more flexible way.

Teaching Teams

The middle school concept emphasizes the use of collaborative teaching teams in which several teachers of different subject matters work together to reflect, plan, and implement a curriculum for a common group of students. The teaching team may comprise anywhere from two to five teachers depending upon the subject matter and number of students within a specific grade level. Most teaching teams consist of teachers that are certified in the core subject areas—mathematics, science, social studies, and language arts, for example. In the last eight years, the use of team teaching—and thus team planning—has risen sharply (Valentine, Clark, Hackman, & Petzko, 2002). Team planning serves two purposes: First, it improves the educational process, since teachers expand their skills and knowledge through collaboration with colleagues (Garner, Ken, & Knowlton, 1999; Walters, Knowlton, & Weiss, 2003). Second, it better prepares students for life in the twenty-first century because teacher decisions about learning, its assessment, and teaching are integrated across disciplines and thus more indicative of the experiences that students will have in the real world (Robertson & Valentine,
We argue that asynchronous discussion can be used to support strong team planning among middle school teachers. Asynchronous discussion provides a written record of students' ideas, comprehension of content, and approaches to applying and analyzing that content. In other words, asynchronous discussion provides a written record of student thinking. With this written record of students' thinking, teams of teachers can plan more effectively by altering their plans in light of students' thinking and understanding. The practice of altering plans in light of students' learning progress is an important characteristic of middle school teaching (Garner, Ken, & Knowlton, 1999; Strottman, 1999). The fact that students' thinking becomes “concrete”—in the form of a written record—also allows teachers to share with each other any areas of concern about student thinking and understanding of content. Middle school teachers have noted that concrete artifacts evidencing student performance can make team planning more effective (Warren, 1995).

Perhaps this type of sharing can even extend beyond the teaching team. For example, teams of teachers now have a written record that can serve as evidence of students' intellectual development and academic performance. Such evidence can help teaching teams better communicate with school administrators, curriculum coordinators, and even parents. Such expanded communication can enhance the notion of middle schools as integrated learning communities (Walters, Knowlton, & Weiss, 2003). Ediger (1998/1999) points out that “shared decision making” about educational interventions is important within middle schools, particularly when those shared decisions are based on student performance.

**Interdisciplinary Thematic Units**

Another characteristic of a good middle school is the use of interdisciplinary thematic units. An interdisciplinary unit is a unit of instruction that is designed around a central theme or concept that crosses boundaries among disciplines (Kellough & Kellough, 2003). For example, Wee (1993) wrote about an interdisciplinary unit where students in a science class worked with students in a language arts class to solve the real world problem of developing a local nature preserve. Similarly, Garner, Ken non, and Knowlton (1999) report of an interdisciplinary middle school project that combined science, math, geography, and language arts. Notions of interdisciplinary units might also involve students considering one topic from a variety of perspectives. For example, a student involved in an interdisciplinary unit about baseball might be calculating batting averages in math, studying principles of motion, inertia, gravity, or other concepts in sciences, and writing newspaper articles about local baseball games in
language arts.

Regardless of the exact approach to interdisciplinary units, the point is to avoid “piecemeal and separate” learning experiences while encouraging “steady reflection on and frequent sharing of what is being done and what is being learned” (Kellough & Kellough, 2003, p. 135). In this respect, the interdisciplinary units are based in a constructivist theory of learning where activities and assessments engage students in problem-solving activities that require collection of real-world data and collaboration. When planning such units, using computers as a learning tool may be helpful (Morrison & Lowther, 2001). For computers to have an effect on student achievement at the middle level, they must be used in ways that elicit higher order thinking from students as those students engage in real world activities (Cradler, McNabb, Freeman, & Burchett, 2003). Computers being used as a tool that assists students in real world endeavors will be highly motivating for students (Quinn & Valentine, 2001). As Archer (1998) notes, the “machines and wiring” do not matter nearly as much as the way students use them to “work in rich [and collaborative] environments of information and experience [in order to] build their own understanding” (p. 18). Based on this literature, it should be clear that middle school students could benefit from the use of asynchronous discussion if it is used as a tool to promote further collaboration and discussion among students.

Furthermore, within interdisciplinary units, asynchronous discussion can support a variety of authentic activities that can help students better process their engagement with constructivist thematic units. Informally, simply exchanging ideas among students can accomplish this type of processing. There are more formal ways, as well. Consider, for example, that through asynchronous discussion, students could engage in collaboratively writing reflective journals and completing peer assessments of each other's ideas. Asynchronous discussion contributions could even be used as a means for having students reflect upon their own growth as a learner through comparing past ideas (as evidenced through contributions to a discussion) to current ideas (Robertson & Valentine, 2000).

As you can see, we are arguing that allowing students to use asynchronous discussion can enhance middle school thematic units. There is benefit to allowing the students to post messages, responses, and questions to each other and teachers in reference to the interdisciplinary unit. Cynics may ask why not physically combine students and engage in these types of activities through face-to-face activities rather than through asynchronous discussion. We certainly do not discount the value of—and necessity for—face-to-face interaction among middle school students. But, most schools do not have the physical capacity to hold two classes together for an extended period of time. Also, using
asynchronous discussion allows the students time to reflect on their own ideas before they respond. Asynchronous discussion can even support thematic units across multiple schools. Consider that through asynchronous discussion a science class in Illinois could participate in an interdisciplinary unit with a Language Arts class in California.

Supporting the Developmental Needs of Students

Asynchronous discussion can help engage middle school students in ways that meet their specific developmental needs. For example, middle school students tend to be socially awkward and easily wounded emotionally (Ediger, 1998/1999), particularly as a result of criticism from their peers' naïve opinions (Knowlton & Garner, 1997). Consider that asynchronous discussion allows students to review what they say before actually submitting their contribution to their peers. Because asynchronous discussion sometimes requires students to analyze each other's points of view and offer contrary perspectives, the removal of immediate time can make these social interactions less awkward. Said differently, the asynchronous nature of discussion puts students in control and allows them to express their ideas with greater ease and freedom than ever before (Caswell, 2001). Control, ease, and freedom lead to student comfort, which is conducive to students being able to avert social awkwardness. In fact, students who are socially shy in classrooms sometimes thrive in an asynchronous environment (Brown, 1997).

We are suggesting that asynchronous discussion can provide a type of “safe haven” for middle school students, and this safe haven helps specifically overcome social awkwardness because students can more freely and easily express their ideas. We would be remiss not to note that with this ease and freedom comes added responsibility. Because tone of voice, facial expressions, and other body language is lost, students must be responsible enough to consider whether they are expressing their ideas in the best possible way (Knowlton & Knowlton, 2001). A simple misinterpretation can lead to damaging results. Even this added responsibility can add to students' social and emotional development, however. Because of the added responsibility, perhaps they can become more adept at communicating in socially sensitive ways.

Designing Asynchronous Discussion for Middle School Students

So far in this paper, we have pointed out that middle schools have several characteristics and purposes that should be supported; we have argued that asynchronous discussion can be used to support those characteristics and purposes. But, teachers should think carefully about how to use asynchronous discussions in ways that support middle school philosophy and are educationally
useful. Teachers should remember that students are “excellent consumers of
entertainment” but they “frequently lack experience” using asynchronous
discussion for educational purposes (Grisham & Wolsey, 2003, p. 3). Therefore,
teachers will need to plan asynchronous discussion in ways that are academically
useful (Morrison & Guenther, 2000). Without such planning, the use of
asynchronous discussion may not be congruent with the purposes and
characteristics of middle schools as described earlier in this paper.

The first author of this paper is a middle school science teacher who has used
asynchronous discussion in ways that we believe support the purposes of middle
school, as well as middle school philosophy and concepts. In this section, we
raise issues for consideration and offer practical advice to other middle school
teachers about designing asynchronous discussions in ways that will best allow
students to benefit. Such advice about design is needed, as middle school
teachers list lack of appropriate training as a key reason that they do not use
technology-based teaching methods (Strickland & Nazzal, 2003).

What Media Considerations Are Important?

There are two primary ways to set up an asynchronous discussion board: e-mail
distribution lists (also called listservs), and electronic bulletin boards. Each has
advantages and disadvantages that a teacher should consider. First, e-mail
software, such as Microsoft Outlook, can be configured to thread messages and
to send e-mail to a group of students. E-mail distribution lists allow the teacher to
easily keep track of which students are signed up for a discussion group (Wolsey,
2004). One advantage to using e-mail software is that many students are already
familiar with e-mail, so integrating the discussion list into their already-existing e-
mail accounts will avoid the need of orienting students to a new software or
interface. Another advantage of using an e-mail distribution list is that each time
students check their e-mail, they are potentially “checking in” on class discussion
as well. This can help create continuity between class discussion and life outside
school. The third advantage of using e-mail software is the ease of use. Once a
conversation e-mail string has begun, students have only to click "reply to all" in
order to quickly send a message to everyone else on the list. A disadvantage to
using students’ e-mail accounts relates to data management. Students might lose
messages or accidentally delete messages as they clean out their mailboxes.
Furthermore, students may not efficiently organize e-mails that are a part of an e-
mail discussion group for an interdisciplinary school project.

The second way of setting up an asynchronous discussion is by using electronic
bulletin boards. Sometimes, such bulletin boards can be created through web-
based services, like Yahoo! Groups or within learning management systems, like
Blackboard. Software for a web-based bulletin board service can be installed and
configured on a school computer, a district computer network, or a remote server. Costs for such set up are often minimal, as is the technical proficiency needed to set up a bulletin board. For example, the first author of this paper has set up a discussion board for middle school students using PHPBB (http://www.phpbb.com/). Then, a link from the classroom website to the bulletin board was created. This allowed students to have easy access to the bulletin board. One advantage to using electronic bulletin boards is that they provide a designated location for students' discussions surrounding school projects. This eliminates the possibility of students confusing their own “private” e-mail with schoolwork. A second advantage is the ability of bulletin boards to serve as an archive for past messages. This makes it easier for teachers to guide students through reflecting on how their own work has evolved over time. Seeing their own work over time is likely to help students better recognize their own intellectual development and changes in their own thinking. One of the disadvantages of using a web-based service for asynchronous discussion is that students must become familiar with the site. Some of the students have not participated in an online discussion and may not understand how to use the bulletin board. Some initial training and classroom guidance could help alleviate this disadvantage.

We have listed two of the major ways of incorporating asynchronous discussion in the classroom. We have listed the advantages and disadvantages of both of these possibilities. Given these advantages and disadvantages, our advice is that using web-based services is the most practical method to use in the middle school classroom.

What Guidelines Should Guide Student Participation to Best Promote Learning?

We believe that guidelines must be clearly communicated before using any type of online discussion. When teachers fail to communicate guidelines for participation, students will have no choice but to try to participate in the online discussion based upon their past experiences (Knowlton, Knowlton, & Davis, 2000). We also think that clearly articulated guidelines will more likely allow asynchronous discussion to spark an interest among students that otherwise would not have been sparked. We think that teachers can establish the general flow of the discussion by initially structuring who contributes and when. Elsewhere in the literature (Knowlton & Knowlton, 2001), for example, it is suggested that students be required to create an initial contribution to the asynchronous discussion. Perhaps teachers should suggest that this initial contribution relate to an interdisciplinary thematic unit and describe things that the student would like to learn during that unit. Teachers then could respond to some of the students' initial contributions. These responses could come in the form of comments or questions
that are designed to encourage the students to think more deeply (or differently) about the things that they hoped to learn as described in their contribution. From this thinking, the students could add additional contributions throughout the interdisciplinary unit to track their own learning.

We wish to make several points about the advice above. We recognize the simplicity of our suggested “flow” to the conversation—it is little more than an electronic brainstorming in the form of a KWL chart. (KWL charts require students to specify what they already know about a topic, what they want to learn, and what they did learn.) We think that such an approach, though, provides a good beginning to the use of asynchronous discussion. Middle school students need to experience success in their use of asynchronous discussion, and our suggested format provides a good start for doing so. Regardless of the exact approach taken, we urge teachers to recognize that an asynchronous bulletin board or listserv is an inappropriate venue for a teacher lecture. If asynchronous discussion is to promote interdisciplinary problem solving, as described earlier in this paper, then students must hold the power within a discussion.

What Role Should the Teaching Team Play within the Asynchronous Discussion?

We have suggested that teachers should not lecture within the confines of asynchronous discussion. Rather, we urge the teaching team to regularly communicate about the discussions occurring within an online bulletin board. Such discussions will serve as useful information for further teacher planning, as we argued earlier. But, such discussions also can help teachers better plan the type of educational interventions that students need within a discussion. We suggest that teachers ask lots of questions within the online discussion.

In terms of raising questions, we think teachers can best serve students by asking questions that will promote additional thinking about interdisciplinary units. Christiansen (1991), for example, suggests prediction questions. Such questions are very consistent with the type of “flow” to the asynchronous discussion that we define earlier. A teacher could help scaffold continued discussion by asking students to predict additional learning issues (what they want to “know”) that might arise as a unit progresses. Hypothetical questions are also useful in facilitating asynchronous discussions. Consider an interdisciplinary unit in which students compare the costs of pizza from different restaurants and write a “consumer report” for their parents about the most economical pizza purchase for the family. A hypothetical question might be related to a new restaurant: “What would happen if a new pizza place opened that was promising to double the discount on competitor’s coupons?” To such a hypothetical question, there probably is a mathematical answer, but more relevant to the discussion, perhaps
there is a psychological result that is worthy of discussion. Such a question, for example, might lead students to discuss consumer loyalty and brand identity. A final type of question suggested by Christiansen (1991) is an action question. Such questions are particularly relevant in helping students plan next steps in their interdisciplinary inquiries or problem-solving activities: “What do you think the class needs to do next to overcome some of the additional problems that have been raised within the context of this discussion?”

**What Logistical Factors Must Teachers Consider?**

If teachers are considering incorporating asynchronous discussion into their classroom, three logistical factors must be considered. Bruce (2000) raises these logistical considerations, but they are common considerations when incorporating media into the classroom. The first logistical factor has to do with students' abilities to use the Internet and bulletin boards. Because of extended class times provided by block scheduling, teachers might be able to organize class sessions to include some initial training in using the Internet and discussion boards. If this type of classroom training is not practical, teachers must at least ask themselves how students will learn to use the bulletin board. Perhaps collaboration among students could allow the less media-savvy students to learn from their peers.

The second logistical factor relates to Internet access. Do all students, for example, have Internet access at home? If students do not have readily available access to the Internet, then teachers must set aside time for students to participate in bulletin board discussions. Again, block scheduling might provide appropriate time for students to participate, but we know of middle school teachers who open their classrooms prior to the start of school or have lab time after school, which also provides students with time to participate in bulletin board discussions.

The third logistical factor involves communication with parents. Even when computers and Internet access are available in the home, some parents may not understand the educational usefulness of asynchronous discussion; these parents may view the use of the Internet as little more than electronic fun and games (Knowlton & Knowlton, 2001). Therefore, these parents might limit their child's access to the Internet. Teachers, then, may need to embark on a public relations campaign to help parents understand the educational usefulness of asynchronous discussion. Teachers might even consider involving parents in the discussions themselves; this would create a stronger sense of community surrounding the middle school (Walters, Knowlton, & Weiss, 2003).

**What Guidelines will Promote Good Behavior among Students while**
Participating?

Guidelines that will promote “good” behavior among students are necessary when using asynchronous discussion within a middle school. The need for such guidelines is consistent with the developmental needs of students as described earlier in this paper. Netiquette—the etiquette of cyberspace—should be taught to middle school students. Practicing strong netiquette among students will make conversations run more smoothly, but more importantly, having students abide by issues of good netiquette will help establish an ethos of respect among students. Establishing respect will more likely avoid students feeling socially embarrassed and awkward. Said differently, establishing a sense of online etiquette will more likely allow asynchronous discussion to become a “safe haven” as described earlier in this paper.

This issue of establishing a sense of netiquette among middle school students becomes more important when the nature of asynchronous discussion is considered. Removed in online discussion are tone of voice, body language, and facial expressions. Whether middle school students realize it or not, they are accustomed to basing their communication on inferences from these physical features. Because online discussion is somewhat alien to students as a mode of purposeful communication, teachers should enforce a sense of netiquette as a means of helping students remember that there are real people on the receiving end of their communications.

Practically speaking, netiquette can become a part of the natural culture of an asynchronous discussion through a top-down approach. A middle school teacher, for example, can simply establish a laundry list of rules to support respect for each other (e.g., don’t type in all capital letters, refer to people in the discussion by name, don’t resort to personal attacks). We think, though, that a laundry list of rules can be replaced by a broader approach toward supporting the need for students to treat each other well online. Perhaps, for example, the “golden rule”—do unto others as you would have them do unto you—provides enough of a basis for establishing netiquette. We also think that the need for netiquette provides opportunities for middle school teachers to promote a sense of empathy among students. We have suggested to students that as they write a contribution to the online discussion they should imagine how they would feel if they were the recipient of the message.

The need to establish a sense of netiquette to govern student behavior has a functional purpose, as well. Namely, netiquette promotes adherence to school rules in an environment where students tend to be a bit more free in their language and behavior. Consider that chat rooms and instant messaging are common in adolescent culture as a means of socializing outside of school. In this
environment, students are a bit freer to express themselves. Even some of the acronyms that have become commonplace are inappropriate in an educational discussion. Two common acronyms are “lmao” or “omfg.” Suffice it to say that the “a” in the first one and the “f” in the second one stand for words that would be highly inappropriate within a school discussion. In short, establishing a sense of netiquette can help students distinguish between formal discussions for academic purposes and the types of cyber-discussions that they may have beyond the walls of schools.

Concluding Thoughts

In this article, we have put forth an argument that has not previously existed in the literature. Namely, we argue that the use of asynchronous discussion among students can actually support some of the characteristics that underlie middle school philosophy. In order for asynchronous discussions to support middle school philosophy and concept, though, teachers must consider the design of those discussions. We have offered functional design guidance for middle school teachers who would consider using asynchronous discussion. Our guidance can be implemented immediately.

Beyond immediate implementation, this paper has implications for future research. Researchers should consider empirically testing some of the ideas within this paper. For example, how do faculty members use contributions from asynchronous discussion in their team planning efforts? Furthermore, student perspectives regarding the use of asynchronous discussion should be explored. We have hypothesized in this paper, for example, that the asynchronous nature of the communication might alleviate social awkwardness among students. Formal research should address this hypothesis.

We hope that the design guidance in this paper and future research that might be conducted using the ideas from this paper can continue to move the use of asynchronous discussion in middle schools toward the end of supporting middle school philosophy and concept.

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