

Gender, Intrasexual Competition, and Online Learning

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Abstract

It has been well established that women are more likely to complete online courses than men (e.g., Young, Dewstow, & McSporry, 1999). The existing literature attempts to elucidate the reasons for this gender difference. Often, the provided explanations are based on the idea that such courses allow for flexibility in time management which permits students to better balance work and family life while completing a course. As an alternative, we suggest that anonymity and the fact that it removes the student from any possibility of intrasexual competition is of even greater significance for women, especially younger women. We first review the existing literature pertaining to online learning and gender, followed by a discussion on intrasexual competition. We then propose that the reason young women turn to online courses is to decrease intrasexual competition. The remainder of the paper provides suggestions for course instructors and important considerations for reducing intrasexual competition in online learning environments.

Key words

Online Learning, Gender Differences, Intrasexual Competition

1 Introduction

To date, researchers who have examined gender and online learning seem to have focused on differences *between* the genders. However, learner differences *within* a female or male group are often more significant than those found *between* groups of female or male learners (Hyde, 2005). In this article, we focus on differences within female groups and examine factors that may account for differences between younger and older women when participating in online learning.

It should be noted that, throughout this paper, our use of the term "online learning" refers to traditional text-based online environments that do not typically offer any multi-media facilities. Environments that cater to real-time audio and/or video conferencing are not taken into consideration. The form of the media has direct implications with regard to the level to which students can remain anonymous; visual interaction obviously decreasing anonymity. With regard to specific technologies, we consider online environments that provide "chat rooms," bulletin boards, discussion forums, any form of instant or email-based messaging, and other equivalent textual communication means. The WebCT/BLS system can be considered as a prototypical example of the type of online environment that we focus on.

The demographics for online learners reveal that younger students (i.e., under 20) and older students (i.e., over 35), most particularly women, are more likely to turn to online courses than intermediate age groups (Young, Dewstow & McSporry, 1999). Moreover, Gunn and colleagues (2003) show that women often perform better than men in online learning environments. This difference in performance suggests that some aspects of an online learning environment are beneficial to women. It seems to be highly probable that there is a relationship between aspects that improve women's performance and those that motivate women's participation. Consequently, we seek to explore the factors that cause women to engage in online learning, with the expectation that this examination will provide instructors with information they can use to improve women's performance and participation in disciplines in which they are generally under-achieving or under-represented.

According to researchers such as Kramarae (2001), McSporry and Young (1999), and Sullivan (2001), it is students with family or work commitments who enrol in online courses as they offer a way for them to negotiate obligations with educational goals. Individuals who have full-time employment can complete online courses in the evenings or during the weekends, at a time convenient to them instead of travelling to a university campus to attend a scheduled lecture. Similarly, individuals with children can accommodate childcare needs more readily with online courses, since there is a high level of flexibility in scheduling. In both of these examples, people are furthering their education while maintaining prior work or family obligations. We suggest that these explanations are more directed towards older rather than younger women. Sullivan (2001) found that while 11% of women indicated online courses allowed flexibility for coping with family commitments, only one third of respondents were between the ages of 25 and 34. The majority of the respondents, who were responsible for Sullivan's conclusions, were over the age of 35. We do not currently know why younger women are motivated to take online courses. When one considers the technology that is needed to participate in an online course, and that women tend to avoid technology (Cooper & Weaver, 2003), this disproportionate enrolment seems even more unusual, particularly for disciplines where women are under-represented (e.g., informatics; McSporry & Young, 2001). We suggest that the absence of intrasexual competition is sufficient to explain high levels of participation by young women, as it is they who are most affected by indirect aggression from intrasexual competition (Campbell, 2002). In the next section, intrasexual competition is explained and its impact explored.

2 Competition in Learning Environments

2.1 Intrasexual Competition and Aggression

"Intrasexual competition" refers to any form of competition that occurs between two or more members of the same sex or gender. The two main competitive strategies that individuals may use to compete with each other are self promotion and competitor derogation (Schmitt, 2002; Schmitt & Buss, 1996). Self promotion includes any actions whereby one improves her/himself to enhance her/his standing relative to others of the same sex who act as rivals. Alternatively, competitor derogation is when an individual attempts to decrease a rival's standing, relative to her/himself. Although these strategies have been predominantly investigated with respect to social relationships, we assert that they can be readily observed in a classroom environment. For example, students might boast about their abilities or grades (i.e., self promotion) or insult their peers' intelligence and abilities (i.e., competitor derogation).

Prior research on these strategies reveals that individuals rely on self promotion more often than

competitor derogation (Schmitt, 2002). There are primarily two reasons for this tendency; first, derogating a competitor may lead to retaliation, whereas self promotion simply involves the enhancement of a feature that one may already possess. Second, self promotion is useful against all potential rivals while derogation is useful against only the identified targets of the derogation. Regardless of the particular strategy an individual uses, or the reason for its use, the intention remains the same: to win a competition. As self promotion is the more commonly used strategy, we hypothesise that in educational settings students will self promote far more often than they will derogate a peer.

As well as using various strategies to compete intrasexually, an individual can use different forms of aggression, such that the aggressive act reflects competitor derogation or self promotion. The two fundamental forms of aggression are indirect and direct aggression. Indirect aggression refers to behaviours where a perpetrator attempts to cause harm while simultaneously attempting to make it appear as though there was no harmful intention (Bjorkqvist, Österman, & Lagerspetz, 1994). Indirect aggression is often used within the context of social relationships, and may be directed at someone's reputation for the purposes of social exclusion. The use of indirect aggression is more prevalent among women, as men tend to instead rely on direct aggression (Campbell, 2002). Direct aggression refers to behaviour, which is often physical, that is oriented towards a specific target and lacks any attempt to disguise the intentions or the identity of the perpetrator.

These gender differences with regard to aggression might be seen within online learning interactions. For example, hypothetically-speaking, instead of telling a group member, Frank, that he is continually failing to complete his fair share of a group project, a female student may initiate a rumour about him to other students. This rumour may contain information that Frank is lazy, or it may contain other derogatory comments about his personality that leads students to perceive him in a negative manner. Ultimately, Frank's postings to an online bulletin board may be ignored, and he may find himself ostracized from the group. In contrast, a male student would be more likely to directly confront the group member, informing Frank that he is being lazy and needs to do more work.

Although both women and men are equally capable of intrasexual competition, there is a noticeable difference in the form of competition, based on several sex-specific tendencies. Campbell (2002) contends that women's competition relies on indirect means since they cannot compete successfully in a physical manner due to the fact that they are smaller than and typically not as strong as men. Moreover, given that women are often primary caregivers, they cannot afford the risks involved in physical altercations as their incapacitation would harm those for whom they provide care. Therefore, to circumvent this potential for harm, women often use non-physical modes of aggression. Furthermore, women's reliance on social networks is often greater than men's, and thus, their competitive strategies must enable them to retain their social reputations and relationships. According to Campbell (2002) these two aspects make it necessary for women to use indirect aggression in their intrasexual competition. Consequently, since online learning environments are simply another form of community (Anderson, 2006), and since sex differences in human behaviour reflect our long, evolutionary history (Campbell, 2002), the same strategies and behaviours that occur within real-life contexts should carry over to online environments. This equivalence means that women should compete intrasexually online using indirect aggression; they may ostracize another student, spread rumours about the validity of this student's ideas, or join together to tell an instructor that the student is stunting the group's productivity prior to talking with the student directly.

While intrasexual competition is undoubtedly exhibited in online settings, it is not uniformly displayed by all individuals. A student's age is a salient factor in terms of competitive behaviour. Typically, social psychology research that is devoted to the study of intrasexual competition focuses on children and teens (Bjorkqvist, Österman, & Lagerspetz, 1994), and young adults (Campbell, 2002; Schmitt & Buss, 1996). In fact, we know of no literature that addresses competition among older women. One reason for this gap is that researchers invest considerable energy exploring activities pertaining to intrasexual competition, conducted by both women and men, within the framework of forming and maintaining romantic relationships (Schmitt, 2002; Schmitt & Buss, 1996). While all relationships are different, it is a common belief that the purpose of forming relationships is to find a partner with whom to have and raise children. Women's intrasexual competition is therefore documented with respect to physical attractiveness and general appearance, as well as a myriad of other factors that are relevant within romantic contexts and which are often more important to younger women. When examining contemporary data on marriage and age, younger women emerge as less likely to be married, and thus can be considered as more available for forming relationships, than are older women who are more likely to have children or to be married and in a stable long-term romantic relationship.

Putting these ideas into a conceptual framework offers several novel explanations for the participation of young women in online learning environments. First, by participating in an online course, women may have the opportunity to decrease the amount of intrasexual competition that they encounter. As online environments often provide an interface that limits student interaction, they may not have to compete in terms of their appearance or personality. Moreover, the learning distractions offered by a traditional classroom environment are lowered; the lack of physical presence can considerably reduce anxiety. A woman who is seeking to avoid competition can hide her appearance and other personal characteristics better in an online setting than she can in a traditional classroom.

Second, we hypothesise that online courses offer a high degree of anonymity, which enables women to express themselves with less fear of aggression or social forms of retaliation. The fact that one can avoid being seen, and thus not be as susceptible to any form of aggression, is an attribute of online environments that is not achievable in real-world classrooms.

Third, as group membership is not based on appearance and physical features, the likelihood of anyone being excluded is reduced. If group formation is based on ability, as evidenced by participation in online forums and similar venues, attractiveness, race, and other physical traits are no longer relevant. For those who are sensitive to others' perceptions, online environments provide a means to avoid dealing with many of the consequences that arise from feeling judged.

The explanations that we provide do not necessarily exclude existing findings with respect to the increased involvement of women in online courses. Instead, they provide additional support from a new perspective and strengthen existing beliefs. An understanding of intrasexual competition does not deny that women with families and/or jobs enrol in online courses because of the associated flexibility. However, it may provide an explanation for why younger women, who are less likely to have familial obligations, also find online courses attractive. We now turn to the issue of competition within the classroom in more general terms.

2.2 Attitudes towards Competition within the Classroom

Ideally, students should be able to choose a course on the basis of its scholarly potential, not due to the

social dynamics that exist in the learning environment. However, the pedagogical styles and forms of evaluation used by some instructors openly encourage high levels of competition among students. For example, an instructor may use proportional evaluation, in which grades are assigned according to the number of students enrolled in the course, leading students to directly compete amongst themselves for the top grades. Some instructors may hold online debates, where the marks that are assigned are based on who, according to students' votes, has the most convincing case. More recently, some of our colleagues who teach in traditional classroom settings are using "game show" style techniques, whereby selected students are pitted against each other to answer trivia questions derived from the course material. Although the intentions of these instructors are admirable, in that they are aiming to increase student engagement and active learning, the form of evaluation and the exercises could lead to students viewing the course as highly competitive. This perception may lead to lowered female participation in a course due to women's tendency to avoid competition (Fisher, 2003).

Previously, we examined the impact of competition within the classroom on course selection and attitudes towards the learning environment (Fisher, 2003). The findings of our study revealed that men were significantly more likely to enjoy a competitive classroom and find such an environment stimulating. In contrast, women were significantly more likely to report that they found a competitive classroom intimidating and would rather avoid courses that encouraged competition. Consequently, we also found that men were more likely than women to have completed a course that they viewed as competitive. Women expressed that they avoided courses, and even disciplines, with a reputation of promoting competition. It is clear that, in general, open and direct competition is not attractive or enticing to women and that its use will deter them from enrolling in a course.

The importance of these findings implies that it is not simply intrasexual competition, for social and relationship reasons, that is of concern. Instead, it indicates that there are various layers of competition that are perceived by students. Whereas there may exist intrasexual competition at the individual level, there may also exist competition at the pedagogical level. Both of these layers may impact on the creation of an inclusive online learning setting and are of importance to educators.

2.3 The Importance of Social Relations

It has been suggested that women have to choose between the social aspects of traditional classroom courses and the time management flexibility that online courses offer (Kramarae, 2001). Some women believe that online courses are cold, less satisfying and less authentic because they lack face-to-face contact (Aman & Shirvani, 2006; French & Richardson, 2005; Kramarae, 2001; Sullivan, 2002; Wegerif, 1998). However, women's high participation rates in online courses signals that this factor is of minimal importance, or at least less critical than scheduling flexibility, to the majority of these individuals.

Whereas a portion of women hold the view that an online environment is less authentic, other women find that they enjoy the social interactions that are offered by online courses. These individuals believe that online courses are more personal because they offer increased opportunity for interaction (Sullivan, 2001; Wegerif, 1998). Online courses do not impose the same requirements for developing relationships, and thus necessitate less time commitment than traditional classroom environments (e.g., Sullivan, 2001). Regardless of all these beliefs, the importance of social relations, especially to women, is evident, and accordingly is continually raised in the literature on learning.

The importance of feeling included in an online course is stressed by Wegerif (1998), who studied the impact of feeling like an "insider" in an online community. He proposes that a student's success in a course greatly depends on this factor. For example, students who feel that they are merely observers of people's conversations often do not succeed. Graddy's (2004) analysis of discourse used by students in an online economics course shows that women used more words connoting interactions among people, as well as expressions of social isolation and exclusion. These results provide additional evidence that women tend to have a stronger interest in social relationships and of the impact of competition on these relationships.

As mentioned earlier, many women emphasize the role of social relations within the educational sphere. Thus, it is not surprising that this focus, and the potential for one's involuntary removal from social interactions, may lead some women to be highly concerned with the possibility of social exclusion or ostracism. In fact, there is a strong possibility that women's tendency to use indirect aggression stems from their need to avoid becoming a target for retaliation through social exclusion (Campbell, 2002). Rossetti (1998) advocates that women's use of language in online environments emphasizes their need to form and maintain social relationships, and as such, they attempt to use language to negotiate and nurture social closeness and friendships. In contrast, she proposes that men establish and maintain social status using competitive language. The identified sex difference echoes throughout the literature in various ways. For example, to encourage the entry of women in underrepresented disciplines, Arbaugh (2000) recommends that online courses should promote collaborative assignments and communication because women prefer these forms of interaction, while men tend to rely on more competitive forms of communication.

In our view, women also use competitive language, but, in real life, face-to-face interactions, it is distinct and often more subtle than men's language, and more frequently involves social relations and group membership (c.f., Bjorkqvist, Österman, & Lagerspetz, 1994). As aforementioned, while both genders use language competitively, men tend to do so directly by challenging competitors whereas women tend to be more indirect, using derogation so as to minimise the risk of retaliation and the likelihood of ostracism (Bjorkqvist, Österman, & Lagerspetz, 1994).

3 Decreasing Competition through Online Learning

3.1 Increasing Anonymity

We claim that one of the most prevalent reasons that young women enrol in online courses is because they experience less intrasexual competition than in traditional classroom environments, which is chiefly driven by the anonymity of online settings. Online courses remove all physical characteristics, and may depersonalise and hide the identity of students. As a result, one is more able to interact with others in an equitable manner, particularly when participation is mandatory and moderated. We acknowledge that there is a debate about whether people actually are anonymous online; for example, it has been found that men with high social status among their peers dominate interactions on academic list servers (Selfe & Meyer, 1991). However, with the removal of factors such as physical appearance, style of clothing and hair, mannerisms, and body language, people are not subject to many of the assumptions that are made before an actual interaction occurs. This loss of knowledge permits individuals to avoid being placed in situations of intrasexual competition that arise from their attractiveness, fashion consciousness and other visible factors. Of course, we do not claim that intrasexual competition due to academic ability is not manifested in online environments. Rather, intrasexual competition due to academically irrelevant factors seems to be reduced.

The anonymity of online learning changes the social dynamics within the learning environment in such a way as to allow female students to feel more comfortable (Sullivan, 2002). It allows shy students a chance to participate without fear of confrontation, which concerns women more than men (Sullivan, 2001). As Gunn and colleagues point out (2003), timid students might be more willing to speak up when they do not have to visibly face an audience, and as perceived anonymity is increased, the intimidating aspects of participation may be overcome.

In an online learning environment, there are lowered feelings of intimidation when asking questions in front of a virtual class (Gunn et al., 2003; Sullivan, 2001). Students who find public speaking frightening may believe it to be easier to participate in an online conference rather than having to talk in front of a class of physically present peers (Gunn et al., 2003; Sullivan, 2001). Through methods of online communication, students are able to interact without awareness of visual cues and the assumptions that others make (i.e., stereotypes) with respect to these cues.

The benefits of anonymity in online learning are highlighted in Sullivan's 2002 study where he invited students who had completed at least one online college-level course to share their past experiences and attitudes towards online learning. Responses from some of the female students indicated that the online classroom created a more comfortable atmosphere for them. One respondent expressed in great detail that:

"It's easier to be yourself if you're invisible. When speaking in the traditional classroom, everyone's attention is focused on you in unison – literally all eyes are on you, and that can be daunting. If someone disapproves or disagrees, it is obvious (body language, roll of the eyes, etc.). I think the reason why people don't participate more in classroom discussion is because they are afraid of looking dumb or being judged in some way. The anonymity of the online classroom removes those fears completely because you don't know your classmates' reactions to what you said for a few days" (Sullivan 2002, p. 139).

This quote draws attention to another important, and often ignored, feature of online environments: the lack of feedback from other students. When one is highly concerned, for social reasons, with the consequences of their participation in classroom activities, the removal of any feedback can increase their participation. Hence, the anonymity of other students is perhaps just as useful, especially for women, as the self perception of anonymity one experiences.

Some women report that they find it beneficial to not meet their fellow students face-to-face in a typical classroom situation (Sullivan, 2002). A different female respondent in Sullivan's study stated that, "one positive point for students is that we do not have to face each other in a classroom atmosphere and be intimidated by looks, weight, height or personalities. Being online gives everyone the same advantage" (p. 138; see also Chamberlin, 2001). Similarly, another respondent indicated that, "in an Internet course we are unable to judge people by appearance, we have no idea what the other students look like" (p. 139). In online environments, most of the ways people "read" each other in social situations are removed (Sullivan, 2001; 2002). People do not have initial impressions based on physical looks and demeanour, including how a person speaks. Without these cues, students have to form impressions of others based on the information that is presented to them through mediated communication.

Compared to a traditional classroom, there are fewer social demands; one less frequently interacts with other students without a defined academic purpose. Similarly, students have limited opportunity to gossip, which is often used for competitor derogation (De Backer & Nelissen, 2006), meaning that individuals are rarely the target of gossip. Hence, there is limited risk of being the victim of derogation, and, overall, reduced opportunity to intrasexually compete.

We do not propose that students will never develop relationships online; Sullivan (2001) found that 5% of female and 2% of male students enjoyed interacting in this context. However, generally-speaking, the opportunity for competitor derogation, potentially via gossip, is decreased. Yet, a case study reported by Wegerif (1998) recorded a young woman who dropped out of an online course. She stated, "It's a cold medium. Unlike face-to-face communication, you get no instant feedback" (p. 38). Thus, while some women find anonymity protecting and desirable, others consider it isolating and undesirable. This contradiction provides strong evidence of the fact that gender differences are trends and not absolutes exhibited by all women or men.

3.2 Decreasing the Need for Self Promotion

The opinions of course instructors and other students are often driven by one's appearance. For example, it is anecdotally well known that wearing glasses is nowadays considered as a sign of intelligence. As women are more likely to contemplate their appearance, since it is a key for self promotion and the attraction of potential mates, many are very aware of the effects that their appearance has on others' perceptions. Thus, online environments permit women to participate in an academic setting without having to self promote through the manipulation of their appearance.

Depending on the pedagogical style of the instructor, traditional classroom settings may encourage students to monitor their body language while speaking in front of the class, impose the need to think quickly to intelligently answer a question, or require the ability to pose an interesting comment. In these types of situations, students need to promote their intellectual prowess, and may have to directly compete for their turn to speak (e.g., Wegerif, 1998). In online environments, one can not raise their voice to compete by becoming more vocal than others. Bulletin boards and chat rooms let all students contribute equally, though with personalised differences in text colour, font choice, and character size. Discussions are often subject to network latency and one's typing speed, which allows brief contemplation before responding to questions and participating in discussions.

Students can still boast in online forums about their abilities, or "show-off" to demonstrate their intelligence. However, we expect these behaviours to be reduced in moderated settings, permitting students to focus more on the course content and less on social behaviours. Moreover, anonymity makes it far simpler for students to challenge a boasting individual without fear of retaliation. In an online environment, the only effective method of self promotion is to use a reliable, clearly observable and irrefutable claim. For example, in a course where all grades are available to all students, only the best students can self promote by referencing their performance.

3.3 Promoting Collaborative Group Work

Group work, such as collaborative assignments, represents an intriguing issue from the standpoint of competition theory. On the one hand, group assignments can decrease competition by providing a unifying focus for the interaction. They can, therefore, promote social exchange and increase shared interactions, allowing students to mentor and assist each other. On the other hand, even if there is a clear focus for the group, the situation can become highly competitive with arguments over leadership and the final product. Division of a class into groups can also increase the competition between the groups, as each group strives

to outperform the others. One known mediating factor that impacts the success of group work, in terms of people's experiences within the group, is the composition of membership. Groups that are mixed-sex often lead to decreased participation by female members and increased participation by male members, as compared to same-sex groups (Bostock & Lizhi, 2005).

Group interaction, however, is a debatable issue, as Kramarae (2001) reports that many women enjoy group discussions, but not group work, and instead prefer to work independently and rely on their own abilities and scheduling. Online courses are generally based on the premise that students are geographically dispersed and that effective communication must be facilitated through a variety of mechanisms (e.g., chat, e-mail). Online group meetings provide a means by which women can benefit from group interaction, but are not subjected to the need for time-consuming face-to-face meetings.

Since online mechanisms can reduce competition within the classroom as a whole, it follows that the same properties will reduce competition for sub-sets of students (i.e., class groups). Likewise, we posit that the same reasons behind students' initial interest in online courses, such as the flexibility that is offered, can influence group work. In a recent classroom-based course that one of the authors taught, an all female group was formed to work on software development. This group, without instruction, established a "Wiki," an online user-editable web site, to facilitate group interaction. When faced with the need to interact, this group (whose members possessed sufficient technological expertise) decided that online communication would permit them to merge their scheduling, family, work, and academic commitments. We learned of this decision and its driving factors through a survey that students were given upon completion of the course. Thus, without being instructed, a group of female students automatically adopted techniques (i.e., online communication) that are a key element of online courses. This behaviour supports our claim that online environments can be highly supportive of group work.

3.4 Providing Individual Feedback

The reporting of student performance can take various forms; some instructors individually contact students to inform them of their grade, while others post student grades using an anonymous identifier. Instructors in traditional classrooms have probably heard the chatter that occurs following the handing back of an assignment as students engage in social comparison by asking each other about their grades. In contrast, although students can make social comparisons in online environments, it does not involve the same interpersonal pressures. For example, one can simply ignore the question, "how did you do" if asked in an e-mail. Students in online courses have more anonymity and this feeling of increased privacy is likely to impact more on women than on men.

Research shows that women are less persistent than men when a comment goes unnoticed (Graddy, 2004). In the context of social comparison, and feedback in general, this difference in persistence after failure to receive acknowledgement could mean that women are more easily deterred from performing social comparison, and consequently, they are less likely to compete. We are not contending that women do not compete for grades or seek acknowledgement for their academic achievements, but rather that they are not as persistent as men, in general, at obtaining other's approval and openly competing on the basis of academic success.

When public feedback is not available, this aspect removes any means for social comparison. While the lack of feedback can be viewed as problematic in that it limits individuals from determining their standing within a course, it equally limits others from assessing the placement of a classmate. If the goal is to avoid the establishment of a competitive setting, this lack of knowledge can be viewed as beneficial.

3.5 Encouraging Active Engagement

It has been shown (e.g., Coates & Humprey, 2001) that active engagement by students taking online courses results in better performance. Students that post to class discussion boards tend to do better in final exams, whereas more passive activities, such as "lurking" on the discussion boards or simply reading them, did not have the same effect (Coates & Humprey, 2001). Involvement does, however, not have to encompass various forms of interaction. The use of a single communication mechanism such as a discussion board is sufficient. Within a large online course that used "breakout" groups, the number of posts that a student sent within the group was strongly associated with their final grade (Bostock & Lizhi, 2005). In the context of this article, we advocate that students should be encouraged to actively engage with the course content and with their peers, as it may cause them to perform at a higher level. The crucial issue, however, is to facilitate participation without causing competition or decreasing anonymity.

In order to promote active engagement with the course content, all students must feel comfortable to participate, again highlighting the need for anonymity. To feel truly at ease, some students should simply not be identified. Instructors should create an atmosphere where students feel at ease in expressing themselves and without fear of repercussion. While it is difficult to meet these goals all at once, steps taken to achieve the ideal setting are likely to benefit the majority of learners on an online course.

3.6 Maintaining Focussed and Moderated Communication

An online course that uses an open communication system without a moderator is likely to lead to decreased participation by women, while men's performance will potentially remain at high levels (Herring, 1993). Instead, the use of moderated environments, whether the facilitator is the course instructor, or an appointed student, who aims to maintain order and group focus, often result in increased active participation by women. It is possible that the fairness offered by moderated discussions decreases perceptions of competition and increases female participation.

Furthermore, in mixed-gender interactions, Herring (1993) found that women were more likely than men to react adversely to verbal aggression in online conversations and would discontinue their active participation, choosing to fall silent and lurk, or to remove their membership from the group. That is, if a woman perceives that another student is being aggressive, particularly a young woman who wishes to avoid direct competition, she may drop out from the group. Moderators, while not necessarily able to prevent all instances of aggression, can censor inappropriate behaviour and create an atmosphere of tolerance. On a microscopic scale, moderators react to problems. On a macroscopic level, moderators provide a sense that fairness and justice will be applied. For women, moderators can alleviate the perception of competition that aggressive students can create. A moderator may also be able to keep discussions focused on the topic, and potentially reduce the number or severity of aggressive interactions.

Some researchers (Anderson & Haddad, 2005) have found that, unlike face-to-face discussions, online classes that have mandatory participation tend to increase female participation, possibly because all voices have a chance to be heard in the absence of visual cues of identity. More importantly, women seem to be more actively engaged in the course when a facilitator maintains order and group focus, regardless of the sex of the facilitator (Herring, 1993).

Evidence regarding the value of a moderator is conclusive. Women find that a controlled environment is preferable to a "free-for-all" setting without established limits. The presence of a moderator increases perceptions of fairness and improves women's chances for unbiased, enjoyable, and meaningful participation in academic discussions.

4 Conclusion

As Anderson (2006) stipulates, online learning communities are political spaces; simply moving a learning community online does not mean that it automatically becomes democratic, less aggressive, or free of problems that plague traditional classrooms. However, as many studies have shown, online learning environments do afford many women a better learning environment than they would experience in a traditional classroom. Here we have attempted to explain why young women in particular are enrolling in online courses, given that previous explanations tended to be directed more towards older women. While it is unlikely that a single reason can sufficiently account for women's preference to participate in online learning, we assert that a decrease in intrasexual competition is a key factor that should be more systematically considered by online instructors and researchers of online education.

Young women represent a population that is faced with high levels of intrasexual competition, according to the psychological literature (e.g., Campbell, 2002). Prior research has focused on the role of intrasexual competition, and indirect aggression, in the attainment of high quality, desirable mates while concurrently minimizing the costs associated with direct aggression. We propose that these behaviours also explain why young women are very attracted to online learning environments. The anonymity offered by these environments offer allows them to focus on academic activities and avoid distracting competitive social situations. We do not contend that other explanations, such as the flexibility provided by online courses, are invalid, but that intrasexual competition is a supplementary reason for young women to choose this alternative form of course delivery.

In conclusion, we suggest that the decreased opportunity for intrasexual competition, to which younger women are more sensitive, provides an explanation for their high participation rates in online courses. We hope that other researchers consider this perspective when exploring online learning, in addition to family, course scheduling and convenience oriented factors.

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