Agriculture Reaches out to all Learning Styles

Introduction
Teachers and extension agents supplement educational material with computer-based technology. The additional material posted on the Web allows people to find more information on topics. The Internet allows people to interact with others through discussion groups and participate in simulations and quizzes with instant feedback. A recent trend in agricultural education is to offer Web-based courses and extension training. Researchers have conducted studies to see if certain learning styles are more restricted by Web-based education.

Purpose
The purpose of this research brief is to find if computer-based courses are effective for all learning styles. This information will allow students to determine if their learning style is successful for Web-based agricultural courses. In addition, information found in this study may be useful to extension agents who could conduct programs and training online. Distance education programs can help the extension system reach those located in rural areas and replace face-to-face programs (McCann, 2006).

Methods
Empirical resources were gathered on learning styles and computer-based courses. These journals were read and compared to create this research brief.

Discussion
Past studies have indicated that different learning styles are not the reason for success in online courses. However, the more technology rich delivery method, the more useful it is for all learning styles (Boyd & Murphrey, 2002). Friedel and Rudd (2006) found that everyone has the ability to learn, even if the setting disagrees with their preferred learning style. By creating online programs with tutorials, games, drills, simulations, and tests learners will experience a more complete online class that is comparable to the interaction received in a face-to-face classroom (Boyd & Murphrey 2002).

A study at Mississippi State University evaluated 4-H volunteers. The volunteers were trained in a multi-media rich, minimally interactive, and face-to-face in-services. Learning styles were evaluated based on Golay’s Learning Pattern Assessment (LPA). Volunteers were tested according to the LPA and distributed to groups based on their learning style. Results showed that delivery methods rather than learning styles were indicators of success in online classes.

It was found that highly interactive computer-based programs led to volunteers’ success and that learning style had little impact. Those who participated in the minimally interactive in-service scored statistically lower than those in the multi-media rich and face-to-face in-services. Face-to-face in-service volunteers scored slightly higher than multi-media rich volunteers on post tests. McCann (2006) implied that “Online instruction can be just as effective as the more traditional face-to-
face instruction that is currently being used within the Extension system” (p. 21).

Boyd and Murphrey (2002) found that computer-based activities can enhance the instructor’s information and appeal to the different learning styles. Animations, video, and sound appeal to auditory, tactual, and visual learners. Their research explained that simulation activities improve learning regardless of the student’s learning style by combining auditory, tactual, and visual media forms.

Gregorc’s study (as cited in Roberts 2006) identifies four types of learners: concrete sequential (CS), concrete random (CR), abstract sequential (AS), and abstract random (AR). Gregorc’s learning styles (as described in Friedel & Rudd 2006) show CS learners think in a linear patterns. CR learners think intuitively on impulse. Learners who are AS tend to be abstract thinkers who enjoy reading and lectures. AR learners learn best in groups and are driven by emotions. Research shows that CS, CR, and AS learners have equal success with online content. AR learners are slightly more successful in an interactive face-to-face class versus an online course.

Advantages

Studies show that learning styles have little effect on the success achieved in computer-based courses. The most significant advantage to this finding is that any learning style can be successful in Web-based courses as long as the Web site is highly interactive (McCann, 2006).

Kallioranta, Vlosky, and Levavengood (2006) found that extension agents are able to use on-line communities, e-mail, and on-line training courses to change the way outreach is delivered. Online based programs allow individuals to access information, receive consistent training, and obtain information at their convenience. The extension program can benefit by cutting travel expenses and having agents available to answer questions instantly via the Internet. It would allow others to access information at any time and provide feedback (Kaslon, Lodl, & Greve, 2005).

Disadvantages

Disadvantages to finding that learning styles do not have a strong effect on success in Web-based classes, is that Web site creators can not focus on certain activities to enhance learning. Instead, Web site creators must include many different types of activities to help all learning types (Boyd & Murphrey, 2002).

Conclusions

Research shows that regardless of learning style, success can be achieved in an online environment. Studies support online learning through multiple Web channels. The more interactive the program, the closer the experience is to face-to-face interaction. These studies will help teachers and extension agents to reach students or trainees in online courses.

Further research should be conducted to find the most successful delivery method for online information. Tests could be preformed to see which teaching supplements are most effective in making the online learning experience like face-to-face interaction. Participants in online classes could take a survey to show the tools they found most useful. This information would be beneficial to program developers and teachers as they create online course content.

Audience

This research brief was created for those interested in conducting online classes or training. Professors and Extension agents can create programs that allow participants to experience an online learning environment that is as effective as face-to-face classes.
References


