Writing Assignment One

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 In the article, Why we believe: Fostering critical thought and scientific literacy in research methods, Beins discusses the art of thinking critically about the world around us. Critical thinking is way of questioning and interpreting the information given to us, rather than simply accepting it as truth. Critical thinking includes recognizing assumptions, and testing those assumptions in order to obtain facts and knowledge (Scriven & Paul, 2007, cited in Beins, 2008). One type of critical thinking is known as scientific literacy. Scientific literacy refers to an understanding of scientific concepts, and the “ability to describe, explain, and predict natural phenomena” (National Science Education Standards, 1995, cited in Beins, 2008). Scientific literacy, and critical thinking in general, affect the way research is conducted. Research methods are scientific procedures or ways of gathering data that can be used to conduct a study.

 According to Beins, there are four things that a scientifically literate student should be able to do. First, he states that a scientifically literate student should have the ability to ponder the way information is given and received. Second, the ability to distinguish between biases and objective truth (i.e. read between the lines). Third, the ability to take apart and reorganize items in a survey. The fourth thing is the understanding that real-world phenomena often oppose simple cause and effect relationships.

 Everyone has unique beliefs, ideas, and ways of gaining knowledge. Found in Beins’ article are four ways of knowing. These ways of knowing consist of tenacity, authority, the *a priori* method, and the scientific method.

 The web is a powerful source of technology. In this fast-paced world, there is always information readily available. The web is one source discussed in the article, Science on the web: Student evaluations of scientific arguments. In this article, the issue of misinformation from web sources is considered. Also evaluated are the issues of credibility, accuracy, reasonableness, and support. According to Brem, Russel, and Weems (2001), the accessibility of misinformation has also brought about more ways to recognize it.

As stated, we can look for the four evaluation categories (credibility, accuracy, reasonableness, and support) with any information found on the web. Credibility includes professionalism, expertise, and no biased interest in the information (Brem, et al., 2001). Accuracy is a challenging criteria, but includes markers or indicators that may determine accurate sources. Examples of those markers are dates of posting or publishing, authors’ contact information, and links to other verifiable sources (Brem, et al., 2001). Reasonableness is “a test of the information against how the world really is” (Harris, 1997, cited in Brem, et al., 2001). If information is in sync with the typical world views, then it is said to be reasonable. The last marker is support. Support refers to additional evidence or information to back up the information that being evaluated.

The purpose of the research study was to evaluate students in the technological world today, how their critical thinking is affected by accessibility to resources such as the web. The demographics of the study included 81 girls at a private school. Girls from grades nine, 11, and 12 participated (Kuhn, 1991; Kuhn & Felton, 2000, cited in Brem, et al., 2001). During the study, three types of web environments were evaluated. These environments were described as hoaxes, weaker sincere sites, and stronger sincere sites.

References

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