**Criticisms of Diffusion Research**

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Introduction

As innovations progress toward total diffusion, these ideas or technological advances are subject to criticism. As Rogers (2003) classified, these criticisms of diffusion research are: pro-innovation bias, recall problem, individual blame bias, and issues of equality. Five studies on the diffusion of innovations were reviewed and categorized based on the information presented in the study; they were then placed into a graphic organizer containing the four types of criticism as well as an additional category that suggests no criticism in figure 1.

Figure 1: Criticisms of Diffusion Research Graphic organizer displaying five studies of the research on the diffusion of selected innovations.

Criticisms of Diffusion Research

Future Lab (2009) conducted a survey with primary and secondary teachers to assess the incorporation of video games in the classroom. This survey was given to teachers ranging in age, seniority, the grade level in which they teach, and gender asking a series of questions about video games (Future Lab, 2009). The study gathered information that overall displayed using video games in a positive light; however, there were equal apprehensions about incorporating video games into the classroom. These concerns included licensing issues, cost of such video games and consoles, and the lack of knowledge the majority of the teachers possess (Future Lab, 2009). The concerns presented in this study would be classified to contain individual blame bias. Rogers (2003) stated, “Individual-blame is the tendency to hold an individual responsible for his or her problems, rather than the system of which the individual is a part” (p. 118). Criticism toward this study can be condensed if the researchers keep an open mind about the root of the concerns or problems addressed (Rogers, 2003).

The second study was conducted by Heo (2009) in which 98 pre-service teachers documented the outcome digital storytelling had on their attitude toward educational technology as well as their enthusiasm to include digital storytelling into their teaching. The results reflected a positive increase in the pre-service teacher’s attitudes and responses to educational technology due to digital storytelling (Heo, 2009). The narrow focus of this study and the quasi-experimental nature in which the study was conducted, it contains criticisms of issues of equality (Rogers 2003). If the study were to focus on a wider range of participants as well as take into considerations of disciplinary background, prior experience, and experience with technology usage the bias would no longer apply.

In the next study, Murphy (2011) focused on how the iPad has been diffused in tertiary environments. Six typologies are discussed on various options for incorporating the iPad into college learning environments (Murphy, 2011). While this study provides detailed information on the positive aspects of the incorporation of the iPad, there were no limitations that were discussed aside from the lack of educational research available due to the newness of the technology, and due to this the study contains pro-innovation bias because the study does not address the negative limitations of the incorporation of the iPad into tertiary environments (Rogers, 2003). As more studies arise, the acknowledgement of the limitations would eliminate this bias.

The fourth study, focused on the possible educational uses of various Web 2.0 tools (i.e. wiki, blog, podcasts, and numerous social networks) as well as the possible integration into the educational environment (Usluel & Mazman, 2009). This study lists the positive aspects of incorporating various Web 2.0 tools into distance education; however it does not accept nor reject any of these tools in this study based on the usefulness or limitations. Based on the information presented in the study, pro-innovation bias is present (Rogers, 2003). Further studies on this topic could focus on individual tools in a variety of setting and record both positive and negative aspects.

The final study, addressed the use of the iPod Touch in the k-12 educational setting. Banister (2010) conducted a study to gather information about how mobile technology can be used effectively in the educational environment. There were many positive aspects given in support of incorporating the iPod touch into the classroom, however there were reasons provided that would suggest that the aspect that would prevent full integration would have to do with the individual at hand. Based on this information, this study contains individual blame bias (Rogers, 2003). This bias could be reduced if the researchers should include both individual variables as well as structural variables to address all aspects of the integration of the iPod Touch (Rogers, 2003).

Conclusion

The four inadequacies of diffusion research play a vital role in the diffusion of a selected innovation. These biases are taken into consideration when diffusion is being considered as well as when individuals are looking to support a given innovation (Rogers, 2003). It is imperative for these four biases to be considered when looking to diffuse as well as support innovations.

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