

## **Interactive Television (ITV) Courses and Students' Satisfaction: A Review of the Literature**

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### **Abstract**

The purpose of this literature review is to identify and address major themes in the distance education literature, particularly as they relate to interactive television (ITV) and student satisfaction. Major themes include satisfaction based on site-type, previous research biases, faculty-student interaction, characteristics of satisfied learners, qualitative differences in satisfaction, satisfaction with regards to traditional versus ITV courses, attitudinal changes and time progression. In addition to summarizing this literature, this review intends to expose critical gaps and offer suggestions for future research. (62 references)

### **A Review of the Literature**

The purpose of this literature review is to identify and address major themes in the distance education literature, with a focus on higher education, particularly as they relate to interactive television (ITV) and student satisfaction. Major themes include satisfaction based on site-type, previous research biases, faculty-student interaction, characteristics of satisfied learners, qualitative differences in satisfaction, satisfaction with regards to traditional versus ITV courses, attitudinal changes and time progression. In addition to summarizing this literature, this review intends to expose critical gaps and offer suggestions for future research. (62 references)

### **Method of Literature Selection**

The following electronic databases were utilized: EBSCO; Academic Search Premier; Agricola; American Humanities Index; Business Source Premier; CINAHL; Communication & Mass Media Complete; ERIC; Health Source: Nursing/Academic Edition; MAS Ultra – School Edition; MasterFILE Premier; Primary Search; Professional Development Collection; PsychINFO; Psychology and Behavioral Science Collection; Religion and Philosophy Collection; Sociological Collection; TOPICsearch; WebSPIRS; ACM Digital Library; Civil Engineering Database; Compendex; Engineering Research Database; IEEE Xplore; and INSPEC. Keywords used in each database included: interactive television, ITV, distance education, satisfaction, student(s) satisfaction, attitude(s), undergraduate student(s), graduate student(s) and various combinations of these words. The literature review also involved snowballing to find articles and abstracts not available in the search engines listed above. Articles referenced in this paper were selected based on their relevance to the various aspects of the topic listed above. This review did not include any limiters.

### **Introduction**

Zarghami and Hausafus (2002) believe “the assessment of student satisfaction with ITV has been overlooked mostly due to the general conclusion that students were uniformly satisfied with distance education” (p. 296). It is easily understood why many might make this assumption, as institutions with such programs feverishly market the advantages of ITV and distance education. Cited advantages, including convenience of location, time, travel, expenses, and opportunity for

capturing lectures on tape for future reference, frequently contribute toward faculty, students and researchers forgetting about the potential woes of dealing with the technological equipment (cameras, microphones, televisions and monitors, etc.) necessary to conduct ITV courses. Many assessment officials and researchers also forget about the upgrading of skills and the maintenance of the comfort level of ITV instructors (many who have limited experience with distance-based instruction) when they envision ITV (Royal, Bradley and Lineberry, 2005).

**Satisfaction Based on Site-Type**

Researchers who have attempted to answer the question of which site produces more satisfied students have often found themselves among mixed and sometimes contradicting results. See Table 1 for a complete visual of the literature contradictions. Specific reasons why one site-type is more beneficial than another are few and far between, but the most prevalent exposition involves opportunity. Six different studies have concluded remote-site student are especially appreciative of ITV because it gives them an opportunity to seek a college degree that might not be possible otherwise (Clow, 1999; Haga and Heitkamp, 2000; Kendall and Oaks, 1992; Kolomeychuk and Pelyz, 1992; Pool, 1996; and Shoemaker, 1998). Other researchers have found the primary reason for host-site students receiving less benefit involves unnecessary distractions. Four studies concluded remote-site students receive the most benefits of ITV because host-site students must contend with all the equipment that would not normally be necessary to conduct class (Grove, 2001; Thomerson, 1995; Wheeler and Batchelder, 1996; and Zhaghami, 1998).

**Table 1.**

Students' Satisfaction Based on Site of Delivery

Host-site students are most satisfied	Remote-site students are most satisfied
Anderson (2000)	Grove (2001)
Anderson and Kent (2002)	Lia-Hoagberg, Vellenga and Miller (1999)
Anderson, Banks and Leary (2002)	Navarro and Shomaker (1999)
Bower, Kamata and Ritchie (2001)	Thomerson (1995)
Bower, Kamata, and Smith (2001)	Wheeler and Batchelder (1996)

Clow (1999)	Zargami (1998)
Fenwick, Hicks, Delaney and Brick (1998)	Zargami and Hausafus (2002)
Gogolin (2000)	
Haga and Heitkamp (2000)	
Sorensen (1996)	

### **Previous research biases**

Holding to the notion that remote-site students are typically more complimentary towards ITV, Clow (1999) conducted a study of his own to test the validity of these results. He argued that previous studies assessing students' satisfaction were biased because students knew they were taking a satisfaction survey. In an effort to test his hypothesis, he conducted a study which involved a survey instrument that did not explicitly lead students to believe their satisfaction was being measured. In fact, his study involved no mentioning of ITV, and was identical to a traditional end-of-semester evaluation. His 400-student sample revealed host-site students were more satisfied based on evaluation scores. From this, he concluded that remote-site students sometimes inflate their responses to keep current distance education programs in place. The following year, Anderson (2000) conducted a large-scale study of her own which consisted of over 3,200 students, intending to test Clow's findings. The results proved to substantiate Clow's findings as 22 of the 23 items on the evaluation instrument indicated students at the host-site were more satisfied.

### **Faculty-student interaction**

When examining the literature of students' satisfaction with regards to ITV, quite possibly the most predominant theme is the issue of faculty-student interaction. Because numerous studies have proven the benefits of faculty-student interaction in general, it is only logical to question the correlation as it pertains to ITV. Bower, Kamata and Ritchie (2001) explicitly state that course satisfaction correlates highly with being satisfied with the instructor. Taking this a step further, Quay and Quaglia (2004), believe the faculty-student relationship works because students generally look up to their instructors, largely because instructors have so much influence over their students. Other scholars have found other psychological and performance links. For instance, Ritchie and Newby (1989) found positive attitudes were strongly associated with increased levels of faculty-student interaction and McCroskey and Anderson (1976) found higher levels of interaction lead to greater student performance.

With regards to interaction, Gogolin (2000) found interaction to be more prevalent at host-sites because of a sense of more immediate live audience. Nearly a decade earlier, Alford (1991) found the opposite to be true. In her research she does not deny that remote-site students had less interaction than on-site students, but does state that when examining total interactions, such as telephone discussions and interactions occurring on screen, on-site students had more interactions with the instructor than host-site students. Zhao's (2002) research completely rebutted previous findings as he found instructors tend to devote extra attention to students at the receiving site. Other related studies include Paulsen, Higgins, Miller, Strawson and Boone's

(1998) study which found remote-site students in a particular special-education course were not satisfied because they felt the instructor did not take an active role in the class. In Ehrhard's (2000) study, she concluded that ITV students were generally satisfied because the interactions between faculty and students were enough to facilitate learning. Clearly, in all instances it appears there is indeed a correlation between satisfaction and faculty-student interaction in ITV courses. This is evident because each study was unique and attempted to measure something different (i.e. learning styles, frequency of communication, etc.).

Many instructors believe the solution to making a class conducive to learning is by increasing the amount of interaction possibilities. However, Simonson, Smaldino, Albright and Zvacek (2003) call this belief of "the more interaction there is in a distance education class, the better" a myth. They say, "Interaction is needed and should be available. However, interaction is not 'end all and be all' of learning... the forcing of interaction can be as strong a detriment to effective learning as is its absence" (p. 78). Zhang and Fulford (as cited in Simonson, 1994) suggest reserving class time for interaction is not really necessary. May (as cited in Simonson, 1993) agrees increasing interaction will not necessarily provide better results because students will learn regardless of whether they interact in class. This point is worth further attention as Clark (2000, 1994) published his widely cited beliefs that technology has nothing to do with the formula for learning; rather, it is the instructional method that drives pedagogy. Fulford and Zhang (1993) concluded the perceived level of interaction was far more important than the actual amount of personal interaction. The authors believe ITV instructors should focus on group interaction instead of trying to target each individual student.

Other studies have revealed factors such as the instructor's enthusiasm is paramount in maintaining interest and promoting learning. Many consider this wishful thinking, as Mayzer and Dejong (2003) reported ITV instructors often have a more difficult time sustaining enthusiasm. Willis (2002) believes the reason for declining enthusiasm is instructors are limited in what they can do because of the technology (e.g. lack of visual cues from students, spontaneity is altered, distance limits sense of community, etc.).

### **Characteristics of satisfied learners**

A number of studies have attempted to define a profile for persons that would be most satisfied with ITV courses. Simonson et al. believe older, non-traditional students are more satisfied with ITV. Sorensen (1996) and Pool (1996) agree that distance education is better suited for non-traditional students because these individuals typically need less peer-to-peer interaction. Biner, Bink, Huffman and Dean (as cited in Simonson, 1995) studied personality characteristics among students and concluded younger students with greater education levels are the most likely to complete an ITV course. Other studies regarding personality characteristics and learning styles include Bower, Kamata and Ritchie's research which concluded these factors have nearly everything to do with students' satisfaction. Using Canfield's Learning Styles Inventory, Gee (1990) found that independent learners are the most successful learning-type of students in ITV courses. Ehrhard (2000), however, found there were no significant differences among learning styles when based on Kolb's learning styles.

Bower, Kamata, and Smith (2001) found that students with lower GPAs and minorities at the remote-site tend to view ITV courses more favorably. Also, concrete thinkers were more satisfied than abstract thinkers, emotionally stable students reported greater satisfaction than less emotionally stable students, and conscientious students were more satisfied than apprehensive students. Lyons, MacBrayne, and Johnson (1994) believe students' satisfaction increases when students become more comfortable with ITV and have taken ITV courses in the past.

Summers (1996) believes gender is a strong predictor of students' satisfaction as well. In her study, she compared traditional-aged distance education students' attitudes and perceptions towards their instructors based on gender. The results, based on evaluation scores, indicated that

male students were more likely to rate an instructor less favorably if the instructor was female. Interestingly, female students gave even lower evaluation scores (than the male students) to female instructors.

### **Qualitative differences in satisfaction**

A study by Kochman (1998) revealed qualitative differences in satisfaction. The author concluded although students at remote-sites are more likely to feel neglected or isolated, students are more able to bond in ways students at the host-site could not. This is due largely to the group having to endure what some believe to be the disadvantage of having to study at the remote-site. The study also found students at remote-sites outperform students at host-sites. This could be attributed to the composition of the class, however, because students of various majors and demographics may not have such a positive bonding experience at the host-site.

With regards to bonding at the remote-site, a study conducted by Wheeler, Batchelder and Hampshire (1996) found students in the study did not have an opportunity to bond. The authors interviewed students, faculty and technical personnel from various colleges and content fields but still found the absence of opportunity to chat before and after class. This missed opportunity left students and personnel feeling distant, in spite of attempts to encourage interaction such as including small TV images in the class. Yet, another study conducted by Lia-Hoagberg, Vellenga, Miller and Li (1999) surveyed nursing students working on masters degrees and found not only that remote-site students were more satisfied, but also they experienced a qualitative difference in connectedness and “professionalization”. Students also believed their professional identity was increased due to the ITV course. This further demonstrates the notion that satisfaction may be largely based upon the demographics of the students in the class. Academic major appears to have a large effect with regards to bonding experiences as well.

#### *Satisfaction in regards to traditional and ITV courses*

Seay and Milkman (1994) surveyed a sample of undergraduate Accounting students enrolled in ITV courses and found students at remote-sites are afraid to interact in class because the technology was intimidating and slow. When students were asked if they would take another ITV course most students said they were uncertain, despite being generally satisfied with the course. Gallagher and McCormick's (1999) study of master's level early-childhood special education students found a similar finding. Students viewed ITV as “acceptable”, but preferred to take courses via traditional means. Although Russell's (1999) “No Significant Difference Phenomenon” compiled the literature of dozens of studies to confirm distance education courses are at least as effective as traditional courses, still it is unclear whether satisfaction varies between ITV courses and traditional courses. This depends largely on the site-types in question as well. Contrary to the findings above, Royal et al. (2005), found students at the host-site were generally satisfied with ITV courses and would take other ITV courses even if traditional courses were offered. With regards to teaching evaluations, Anderson and Kent (2002) believe students are likely to rate ITV instructors lower than instructors in a traditional setting. Silvernail and Johnson's (1990) research found teaching evaluations of ITV instructors showed little difference from typical evaluations. The authors found students were able to distinguish the difference between the instructor and the technology, therefore, students were able to rate the two separately. Royal et al's research corroborates these findings as the authors found instructors were rated highly, despite the students' dissatisfaction with technical failures.

Major and Levenberg (1997) claim student learning and satisfaction revolve around the instructor's ability to manage the instructional environment, the same as in a traditional classroom. Simonson et al. (2003) discuss the myth that more distance education training will make better instructors. Although the improvements are probable, they are slight. This is problematic because it is largely believed that educators can be trained to be better educators. According to Simonson et al. content knowledge is the most important competency. Essentially,

both agree that instructors can be better trained in pedagogy, but if one fails to possess the content knowledge, good pedagogy is futile.

### **Attitudinal changes and time progression**

Do students' attitudes at different site-types change as the semester progresses? Fenwick et al. (1998) examined an Agricultural Experimental Design course to study attitudes. They pre-tested and post-tested to see if attitudinal changes occurred during the course of the semester. Students at the host-site grew more satisfied while students at the remote-site became less confident and more reluctant to speak out in class. This suggests students' satisfaction is dynamic and is likely to change at any time depending on a number of factors. This raises issues regarding all the previous studies in the sense that evaluations were generally conducted at the end of a course. Mid-semester evaluations might produce significantly different results. Further research is needed in this area.

### **Conclusions and needs for future research**

There appear to be conflicts throughout the literature. Debates between which site-type is most satisfying to students, which site-type provides students more benefits, who is most likely to be content with ITV courses, etc. prove there is a great deal of quality research needed in these areas. However, in all instances a plethora of research criticizing the quality and methods of previous research exists. Particular criticisms include Phipps and Merisotis (1999), Merisotis and Phipps (1999), and Bernard, Abrami, Yiping and Borokhovski (2004) who believe distance education research (broadly defined, yet including ITV studies) lacks the elements that make research sophisticated and credible. Anglin and Morrison (2000), Diaz (2000), Perraton (2000) Saba (2000) and Ungerleider and Burns (2003) cite the following additional flaws in the overwhelming majority of research: a) lack of experimental design and control groups; b) lack of randomization of subjects; c) lack of randomization as it relates to treatment conditions; d) questionable validity and reliability issues; and e) inability to account for various measures as only a small portion of what is really going on is explained. Watkins and Schollosser (2003) point out the vast majority of published studies are case studies and best-practices papers. According to Phipps and Merisotis, "... the most important problem [in distance education research] is that the overall quality of the original research is questionable..." (p. 25). Most studies cross-reference one another and further limit meaningful growth (quality versus quantity) in the research literature. Perhaps these problems of "literature inbreeding" will cease if more scholars begin to focus on the importance of literature reviews ( Moore , 2004) and begin incorporating theoretical frameworks to guide the research (Phipps and Merisotis; Reeves, 1993, 1995).

With regards to specific gaps in the literature, one will notice there are limited studies throughout disciplines/majors as well as limited studies making comparisons between graduate and undergraduate students. Another major gap is due to the over-studying of paired site-types, as opposed to studying each site-type individually. Paired-site type studies tend to be deductive as they attempt to show what is going on overall. Most distance education research is inductive in nature. Deductive studies are problematic because one cannot make claims regarding site-types from the deductive perspective because it makes unwarranted generalizations. This and the argument that any form of distance education should not be compared to traditional education because it is a mismatch both theoretically and methodologically provides attestation to call for a cease of this type of research.

Another major problem or gap in ITV literature pertains to the use of end-of-semester evaluations (or summative evaluations). More studies need to be conducted during semesters (formative evaluations) to detect early sentiments and attitudes, not just how students feel at the end of a course when they feel they have secured a sufficient grade (or not). Finally, most quantitative studies result in large pools of data, but little in terms of content and variation. Likewise, qualitative studies are generally case-specific and lack philosophical and/or theoretical

soundness. One might argue an appropriate balance of quantitative and qualitative components (mixed method studies) might produce higher quality research than that found in the current literature.

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