

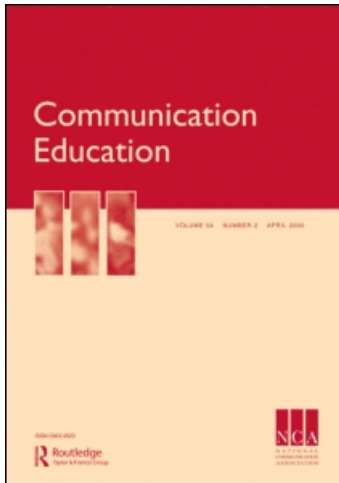
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# A Review of Humor in Educational Settings: Four Decades of Research

John A. Banas, Norah Dunbar, Dariela Rodriguez & Shr-Jie Liu

*The primary goal of this project is to provide a summary of extant research regarding humor in the classroom, with an emphasis on identifying and explaining inconsistencies in research findings and offering new directions for future studies in this area. First, the definitions, functions, and main theories of humor are reviewed. Next, the paper explains types of humorous instructional communication. Third, the empirical findings of both the source and receiver perspectives are reviewed. Finally, this paper concludes with advice for educators and suggests potential future research directions for scholars.*

*Keywords:* Humor; Instructional Communication; Learning

In Season 14, Episode 7 of *The Simpsons*, members of the selection committee for a teaching award watch videotapes of applicants. After watching a teacher perform a series of rapid, Robin Williams-like, humorous impressions that are seemingly irrelevant to the class material, a committee member exclaims, “*Dead Poets Society* has ruined a generation of educators!” Although the quote may not unequivocally demonstrate why *The Simpsons* has earned the reputation as “the most important cultural institution of our time” (Turner, 2004, p. 5), it does raise an important question for instructional communication scholars and education professionals, namely: How does humor influence the education process? This is an issue that scholars of instructional communication have devoted substantial research attention.

Contrary to *The Simpsons* quote above, a number of scholars have advocated that teachers incorporate humor into their classrooms (Berk, 1996; Berk & Nada, 1998; Brown, 1995; Cornett, 1986; Davies & Apter, 1980; Johnson, 1990; Kher, Molstad, &

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Donahue, 1999; Ziegler, Boardman, & Thomas, 1985). In a particularly enthusiastic endorsement, Cornett claimed that humor is an educator's "most powerful resource" to achieve a wide range of beneficial educational outcomes, including such disparate effects as controlling problematic behavior and facilitating foreign language acquisition (p. 8). Although Cornett's view of the transformational power of instructional humor may seem extreme, the notion that humorous instructional communication is beneficial is quite common among researchers. Indeed, the overwhelming majority of instructional communication research on humor has focused on the *positive* consequences of classroom humor, particularly in terms how humor increases motivation and learning (e.g., Aylor & Opplinger, 2003; Bryant, Comisky, & Zillmann, 1979; Bryant & Zillmann, 1989; Conkell, Imwold, & Ratliffe, 1999; Davies & Apter, 1980; Frymier, Wanzer, & Wojtaszczyk, 1999; Frymier & Weser, 2001; Gorham & Christophel, 1990; Kaplan & Pascoe, 1977; Wanzer & Frymier, 1999). However, some researchers have noted that certain types of instructional humor may have negative consequences as well (e.g., Gorham & Christophel, 1990; Harris, 1989; Stuart & Rosenfeld, 1994; Torok, McMorris, & Lin, 2004). Further, methodological and conceptual discrepancies in instructional humor research have often prevented clear conclusions about how humor functions in the classroom (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003; Teslow, 1995; Ziv, 1988). For example, Teslow concluded his review of instructional humor research by noting that much of the empirical evidence is old, equivocal, lacking replication and manipulation checks, and frequently involves only young children.

This essay seeks to elucidate the role of humor in instructional communication through a review of more than 40 years of scholarship.<sup>1</sup> The primary goals of this project are to provide a summary of extant research on humor in the classroom, identify and explain inconsistencies in research findings, and to offer directions for future studies in this area. To meet these goals, this paper initially provides an overview of background information regarding humor research, including definitions, theories, and functions of humor. Next, the quantitative and qualitative differences in instructional humor are examined. The sections that follow review the empirical research on humorous instructional communication from both a source and receiver perspective. Finally, this paper provides general conclusions for implementing instructional humor as well as potential future research directions for scholars.

### **Foundations of Humorous Communication**

Answering the question of how humor operates in the classroom is not a simple matter. Instructional humor is complex, and researchers have taken a variety of approaches in their studies of humorous communication. Before reviewing the empirical findings related to instructional humor, it is necessary to examine several issues that provide the foundation for understanding humor scholarship, including: definitions of humor, functions of humor, and theories of humor.

### *Definitions of Humor*

Although the definitions of humor vary, there is widespread agreement among scholars that humor involves the communication of multiple, incongruous meanings that are amusing in some manner (Martin, 2007). Gervais and Wilson (2005) summarized the fundamental nature of humor as “nonserious social incongruity” (p. 399). S. Booth-Butterfield and Booth-Butterfield (1991) emphasized the intentional use of both verbal and nonverbal communication behaviors that elicit positive responses like laughter and joy in their definition of humor. Although intention is not a crucial element of some definitions of humor (e.g., unintentional humor in Martin, 2007), it is an appropriate characterization of much of the instructional humor examined in the literature. Humorous communication ideally leads to laughter, but there are several different functions served by humor beyond amusement. These functions are examined next.

### *Functions of Humor*

When considering how humor affects the education process, it is important to understand that humor is not a homogeneous concept. Humor serves a variety of positive functions, such as increasing group cohesion and coping with stress, but it also can serve negative social functions, such as derision and social isolation (e.g., M. Booth-Butterfield, Booth-Butterfield, & Wanzer, 2007; Kane, Suls, & Tedeschi, 1977; Lefcourt, 2001; Lefcourt & Martin, 1986; Mulkay, 1988). M. Booth-Butterfield and Wanzer (2010) note that humorous communication is frequently goal-directed and strategic, but consistent with Berger’s (2002) conceptualization of communication goals, individuals may have secondary social goals when using humor beyond supplying amusement, even if they are not aware of it.

One broad function of humorous communication beyond eliciting laughter is social influence, which is especially pertinent to instructional communication. Scholars have frequently conceptualized humor as an indirect form of social influence (Cialdini, 2001; Gass & Seiter, 2007). Humor is an affinity-seeking behavior (Bell & Daly, 1984; S. Booth-Butterfield & Booth-Butterfield, 1991; Frymier & Thompson, 1992), and people who are liked tend to be more influential (Cialdini). This idea of indirect influence is supported by research on humor in advertising, which estimates that 25–30% of advertisements use humor to influence consumers (Weinberger & Gulas, 1992). Humor can be influential in positive ways, as when it is used to create group cohesion through shared enjoyment (Kane, Suls, & Tedeschi, 1977; Martin, 2007; Provine, 2000). In addition to enhancing cohesiveness by creating an enjoyable environment, humor can facilitate cohesion through softening criticism, as the inherent ambiguity of humor provides cover if a particular remark is not well received (Keltner, Capps, Kring, Young, & Heerey, 2001). In contrast to enhancing group cohesion, humor can also be used divisively to disparage others. In this way, humor can be a means of control, as mocking nonconforming behavior can reinforce power and status differences and suppress undesired actions (Martin, 2007).

In the preceding discussion, it may be evident that humor shares some conceptual territory with teasing, or playfully making fun of someone. Teasing is an element of humorous communication, and playful teasing has been shown to be related to a variety of prosocial outcomes (see Mills & Carwile, 2009, for a review). Teasing is a common form of humorous communication, but not all humor involves teasing. Furthermore, there are two primary reasons why teasing by teachers may be ineffective in a classroom. First, targeting students with humor is perceived as highly inappropriate for the classroom (Wanzer, Frymier, Wojtaszczyk, & Smith, 2006). Wanzer et al. found that targeting students was second only to offensive humor (e.g., sexual jokes/comments) in terms of inappropriateness. Inappropriate humor is not appreciated or enjoyed, and it is viewed negatively, regardless of whether the teachers meant to harm feelings with their comments. Second, the power difference between teachers and students inhibits reciprocal teasing. Coser (1964) argued members of a group with less status do not make higher-status members the target of their humor in face-to-face interactions. In a classroom environment, students may not feel comfortable engaging in reciprocal teasing with a professor, and they may come to resent being the target of humor without the ability to respond.

A second way humor functions is as a coping mechanism. Individuals who can see the amusing sides of problems are more adept at coping with stress (Bellert, 1989; M. Booth-Butterfield et al., 2007; Dillon, Minchoff, & Baker, 1985; Miczo, 2004; Nelek & Derks, 2001; Wanzer, Booth-Butterfield, & Booth-Butterfield, 2005). For example, M. Booth-Butterfield et al. found that the higher the general predisposition to communicate humor, the stronger the sense that students can cope with stressful circumstances. In addition, perceiving amusement from the failings of others, especially those who obstruct the attainment of our goals, reduces the psychological distress caused by others while producing some feeling of delight at their expense (Henman, 2001).

In summary, humor can serve a variety of functions beyond providing amusement. Humor can facilitate liking and bring people together, or humor may be used to disparage others and socially isolate them. Additionally, humor can help individuals cope with stress. In the following section, the major theories of humor are reviewed. These theories explain why some communication is humorous, address the functions discussed above, and form the basis for understanding why humor affects important educational outcomes, especially learning.

### *Theories of Humor*

There are many different theories that address humor and its various functions, M. Booth-Butterfield and Wanzer (2010) noted that three are considered seminal, particularly for explaining why some communication may be perceived as funny: incongruity theory, superiority theory, and arousal theory.<sup>2</sup> Incongruity theory states that a surprise or contradiction is essential for humor (Berlyne, 1960). According to the theory, people understand humorous communication because they are able to resolve the incongruity. With incongruity theory, there is an emphasis on cognition

rather than the social or emotional aspects of humor, and therefore, incongruity is considered to be more of a theory of how humor is understood rather than how humor functions (Suls, 1983). Superiority theory, which dates back to the philosophical writings of Plato and Aristotle, argues that laughter arises out of the sense of superiority experienced from disparagement of others (Gruner, 1978, 1997; Martin, 2007; Morreall, 1987). Using humor to make fun of others is an example of superiority theory. Scholars have noted that aggressiveness seems to be the root of a great deal of humor; however, Gruner also sees humor as a playful competition where winning can be established by either getting the joke or eliciting a laugh. Arousal theory conceptualizes humor as a complex interaction between emotion and cognition (Martin). Arousal theory (Berlyne 1960, 1969, 1972) posits that humor and laughter are a combination of a cognitive appraisal with optimal physiological arousal. Humor itself is a pleasurable emotional experience called mirth (Martin). Other versions of arousal theory posit that humor and laughter release built-up tension and stress. The coping functions of humor noted above are based on this tension-relief element of arousal theory.

### Theories of Instructional Humor

Although superiority, arousal, and incongruity account for key elements of humor, they do not explain the relationship between instructional humor and learning (Wanzer, Frymier, & Irwin, 2010). However, theories based on some of the ideas from the three major theories do address why educational material that is presented in a humorous manner may be learned and recalled better than the same material presented in a more serious fashion (Opplinger, 2003; Teslow, 1995; Wanzer et al.). Recently, Wanzer et al. advanced the instructional humor processing theory (IHPT), an integrative theory that draws from the elaboration likelihood model (ELM) of persuasion (Petty & Cacioppo, 1981, 1986) and incongruity theory (Berlyne, 1960), to explain how instructional humor can facilitate learning. According to the IHPT, for humor to facilitate learning, students need to perceive and then resolve the incongruity in a humorous instructional message. If the students do not resolve the incongruity, they may experience confusion instead of humor. Further, the IHPT proposes that the recognition of humor will increase students' attention.

The IHPT maintains that to capitalize on the increased attention created by instructional humor, students needed to have the motivation and ability to process the instructional messages (Wanzer et al., 2010). Petty and Cacioppo's (1981, 1986) ELM explains that motivation and ability are necessary elements for message elaboration, or deeper thinking about a message. The IHPT proposes that increased elaboration resulting from instructional humor should increase recall and learning. Two important considerations are the relevance and appropriateness of humor. First, the relevance of humor to course content may increase motivation and ability to process messages. Relevant humor does not distract from the instructional message and can make information more memorable. The second consideration, the appropriateness of humor, influences the affective response by the receivers

(see the humor types section below for a more extensive discussion of humor appropriateness). According to the IHPT, appropriate forms of humor create positive affect while inappropriate forms create negative affect. Positive affect enhances motivation to process, and negative affect decreases motivation to process.

Positive affect has been proposed as a mechanism in other theoretical explanations of the link between instructional humor and learning. Emotional response theory (Mottet, Frymier, & Bebee, 2006) posits that emotions trigger approach or avoidance behaviors. Applied to instructional communication contexts, positive emotions, like mirth resulting from instructional humor, guide approach behaviors in the classroom that enhance learning. Similarly, Martin (2007) argued that the positive emotions aroused by instructional humor may become associated with learning. As a result, students acquire more positive attitudes towards education, which then increases their motivation to learn and results in improved academic performance.

This section reviewed the theoretical rationales for why humor may enhance learning in order to provide a framework for examining the empirical research on instructional humor. When examining instructional humor research, it is important to consider whether the scholarship is developed from the perspective of the source or the receiver (M. Booth-Butterfield & Wanzer, 2010). M. Booth-Butterfield and Wanzer argue that recognizing the difference between source and receiver perspectives is crucial because, although both make significant contributions to scholarship, they do not examine the same construct. The source perspective encapsulates research on the types of communication behaviors people enact to achieve a humorous outcome and the goals that they hope to accomplish through humor (M. Booth-Butterfield & Wanzer). The receiver perspective focuses on the effects of instructional humor. In the next section, empirical research conducted from the source perspective is presented as the frequency and types of instructional humor are presented, followed by individual differences in humor production. Then, research from the receiver perspective will be reviewed, specifically studies examining how instructional humor relates to perceptions of the instructor, classroom environment, and learning.

## **Quantitative and Qualitative Differences in Instructional Humor**

### *Instructional Humor Frequency*

The question of how much humor is used in the classroom has received a fair amount of attention from researchers in the past (e.g., Bryant, Comisky, & Zillmann, 1979; Downs, Javidi, & Nussbaum, 1988; Gorham & Christophel, 1990; Javidi & Long, 1989; Neuliep, 1991). However, it is difficult to estimate how often humor is used in the classroom because the amount of humor reported tends to be a function of the method used in the study. Observational methods tend to yield more instances of humor than self-report methods, and instructional humor frequencies vary greatly. Furthermore, the studies specifically examining the frequency of instructional humor are at least two decades old. Nevertheless, the research investigating the prevalence of

classroom humor provides some evidence of instructional humor usage rates. In college classrooms, naturalistic observation methods have revealed instructional humor to be a not uncommon practice. For example, Bryant et al. analyzed unobtrusively obtained tape recordings of 70 randomly selected college classes and found that professors incorporated humor an average of 3.34 times per 50-minute class session, or approximately once every 15 minutes. Bryant et al. also found that nearly 50% of professors used between one and three humorous messages, 30% of professors used humor four or more times, and 20% of their sample failed to use any humor at all during class. Higher rates of humor usage (13.33 humor attempts per 50 minutes) were found in Downs et al.'s study of 57 college professors who tape-recorded their lectures on three separate occasions during a semester. Downs et al. also examined tape recordings from a separate sample of award-winning professors and found an average of 7.44 examples of humor per class. Interestingly, humor usage decreased slightly in both samples as the semester progressed. In another study, Javidi and Long analyzed tape-recordings from 40 separate college classes and found an average of 4.05 humorous messages per 50-minute class. Notably, large differences were found between experienced professors, who used 6.50 instances of humor, and inexperienced graduate students, who only used 1.60 humorous messages per class.

Compared to unobtrusive recording of classrooms, self-report measures have yielded significantly lower rates of instructional humor. In their study of college instructor humor, Gorham and Christophel (1990) required student observers to manually record humor attempts and found only 1.37 instructor humor attempts per class. They noted that their method may have contributed to the lower frequency of humor documented in their study. In a study of 388 high-school teachers, Neuliep (1991) asked instructors to self-report the frequency of humorous attempts made per class. Neuliep found that their sample of high-school teachers self-reported an average of 2.08 humor attempts per class.

Compared to college instructors, high- and intermediate-school teachers have been found to use slightly less humor in their classes. In a comparative study of 60 tape recordings of college, high-school, and midhigh classes during multiple points in a semester, Javidi, Downs, and Nussbaum (1988) found college professors made 7.20 humorous attempts compared to 2.80 attempts for high-school teachers and 2.33 attempts for midhigh school teachers. These rates are similar to those reported in Neuliep's (1991) study.

As noted earlier, the rates of humor reported in these studies need to be interpreted with caution. The studies focusing on instructional humor frequency are at least 20 years old, and the different methods used to document humor rates make comparisons difficult. In the next section, the focus shifts from away from quantitative and toward qualitative distinctions of instructional humor. This area of research from the source perspective has revealed numerous insights about the types of humor used, as well as their appropriateness for instructional communication.



*Types of Humor Used in the Classroom*

Several classification taxonomies have been created to address the types of humor used in classrooms (Bryant et al., 1979; Frymier, Wanzer, & Wojtaszczyk, 2008; Gorham & Christophel, 1990; Nussbaum, 1984; Wanzer et al., 2010). The taxonomies vary in the number of categories of humor, with the simplest ones classifying humor broadly into *positive* or *negative* types based on the function that the humor appears to serve. Martin et al. (2003) introduced a model of humor styles that categorizes humor use into generally positive or affiliative, and tendentious or aggressive uses of humor. Affiliative humor is aimed at amusing others, building friendships, or reducing tension. The goal of affiliative humor is to enhance liking and cohesiveness. Aggressive humor involves manipulating or denigrating others, and can be seen in ridicule, mocking, and other forms of disparaging humor. Similarly, Sala, Krupat and Roter (2002) also categorized humor along positive and negative dimensions in physician-patient interviews, but they also added a category for irony and tension-releasing humor, which is not easily identified as positive or negative.

Consistent with the idea that humor can be meaningfully categorized along positive, negative, and general dimensions, Hay (2000) identified three functions of humor among friends: solidarity-based humor, humor to serve psychological needs, and power-based humor. Solidarity-based humor involves building solidarity among group members to create consensus. Some techniques used include sharing personal experiences, highlighting similarities through shared experiences, or clarifying and maintaining boundaries. Humor serving psychological needs is used to defend oneself or cope with problems arising in the conversation. Power-based humor serves to maintain boundaries between ingroup and outgroup members, to raise the status of the humorist, to foster conflict with another, and to influence or control the conversational partner. These three functions could be relevant in the classroom as well because instructors can use humor to create solidarity with their students, cope with problems in the classroom, or raise their own status.

Some scholars have used inductive analytic techniques to further classify humor types used in the classroom. Using a sample of 712 student-generated examples of appropriate teacher humor, Wanzer et al. (2006) reduced them to four main types with 26 subtypes. The four main types included humor related to class material, humor unrelated to class material, self-disparaging humor, and unplanned humor. Frymier et al. (2008) conducted a factor-analysis of the Wanzer et al. types that resulted in five major categories: other-disparaging, related, unrelated, offensive, and self-disparaging. Frymier et al. further found that using relevant humor to demonstrate course concepts was generally the most appropriate type of humor for instructors. Not surprisingly, humor that disparages others or is offensive because it targets religious or ethnic groups was seen as the least appropriate for the classroom (see Table 1).

Rather than classifying humor types by their function, other researchers have created taxonomies based on the general form of the humor. Martin (2007) argued that humor can be divided into three broad forms: jokes, which are context-free

**Table 1** Humor types

Humor type	Description	Representative work	Appropriateness for classroom
Affiliative; Solidarity-based	Amusing others, building solidarity, relieving tension	Hay (2000); Martin et al. (2003)	Appropriate
Psychological needs/Self-Enhancing	Humor used to defend oneself, regulate emotions, or cope with problems that arise during the interaction	Hay (2000); Martin et al. (2003)	Appropriate
Power-based humor	Establish boundaries and create status differences	Hay (2000)	Appropriate
Humor related to class material	Stories, jokes, or other humorous content related to class material	Cornett (1986); Frymier et al. (2008); Kaplan and Pascoe (1977); Wanzer et al. (2006)	Appropriate
Funny stories	Events or activities connected in a single event related as a tale	Bryant et al. (1979); Bryant et al. (1980)	Appropriate
Humorous comments	A brief statement with a humorous element	Bryant et al. (1979)	Appropriate
Seeking funny others	Encouraging humor use in others or seeking out other people known to be funny	Wanzer et al. (2005); Cornett (1986)	Appropriate
Humor unrelated to class material	Stories, jokes, or other humorous content not related to class material	Frymier et al. (2008); Wanzer et al. (2006)	Context-dependent
Self-disparaging humor	Making one's self the target of the humor	Bryant and Zillmann (1989); Cornett (1986); Frymier and Thompson (1992); Frymier et al. (2008); Wanzer et al. (2006)	Context-dependent
Unplanned humor	Humor that is unintentional or spontaneous	Martin (2007); Wanzer et al. (2006)	Context-dependent
Jokes or Riddles	Build-up followed by a punchline	Bryant et al. (1979, 1980); Martin (2007); Ziv (1988)	Context-dependent

**Table 1** (*Continued*)

Humor type	Description	Representative work	Appropriateness for classroom
Puns	Structurally or phonetically words or phrases having two or more meanings were used simultaneously to play on the multiple meanings	Bryant et al. (1979)	Context-dependent
Low humor	Acting silly, stupid, or absurd in specific situations	Wanzer et al. (2005)	Context-dependent
Nonverbal humor	Using gestures, funny facial expressions, vocal tones, etc. for humorous intent	Wanzer et al. (2005)	Context-dependent
Impersonation	Doing impressions or mimicking voices of famous characters	Wanzer et al. (2005)	Context-dependent
Language or word play	Witty or clever verbal communication including using slang or sarcasm	Wanzer et al. (2005)	Context-dependent
Laughing	Laughing or varying intensity as a means to make others laugh	Wanzer et al. (2005)	Context-dependent
Using funny props	Using funny props such as cartoons, water pistols, funny cards, etc.	Wanzer et al. (2005)	Context-dependent
Visual illustrations	Use of pictures or items expected to promote humor	Bryant et al. (1981)	Context-dependent
Humorous Distortions	Use of irony or comical exaggerations	Bryant and Zillmann (1989)	Context-dependent
Test items	Using items on tests and assessments that contain humor	Ziv (1988)	Context-dependent
Aggressive; Other-denigrating	Manipulating or denigrating others, ridicule, or mocking	Frymier et al. (2008); Gorham and Christophel (1990); Martin et al. (2003); Stuart and Rosenfeld (1994)	Inappropriate
Offensive humor	Humor based on the race, ethnicity, sex, political affiliation, or sexual orientation of another	Frymier et al. (2008)	Inappropriate

anecdotes containing a setup and punchline; spontaneous conversational humor, which can include any intentional verbal or nonverbal humor attempt that is intentionally enacted during social interactions; and unintentional humor, which includes physical and linguistic accidents that cause laughter or mirth. Bryant et al. (1979) noted whether humor used by instructors was prepared or spontaneous and then further classified instructional humor into six categories: jokes, riddles, puns, funny stories, humorous comments, and “other” which included using funny sound effects or visual exaggerations. Funny stories were the most commonly used humor type. Building upon Bryant et al.’s types, Gorham and Christophel (1990) classified classroom humor into 13 types, which differentiated both the form of the humor (i.e., tendentious comment, personal story, etc.) but also identified the target of the humor (i.e., self, individual student, class, popular culture, etc.).

Still other typologies appear to blend both the style and function of the humorous message into their classification systems. Wanzer et al. (2005) classified humor into nine types including low humor (e.g., acting silly or stupid), nonverbal humor (e.g., using gestures or funny faces), impersonation of specific characters, language/word play (e.g., jokes, slang, or sarcasm), using humor to reduce negative affect, expressiveness/general humor (e.g., banter, joking, or happiness to lighten moods), laughing, using funny props, and seeking others who are known to be funny.

In summary, there are a variety of approaches to classifying the types of humor enacted in classrooms. The research reported here clearly demonstrates the multi-dimensional nature of instructional humor, and further, suggests that the relationship between instructional humor and educational cannot be understood without taking into account the type of humor used, particularly regarding appropriateness and offensiveness. In the next section, research from the source perspective will continue to be reviewed, this time with an emphasis on individual differences in instructional humor use.

### **Individual Differences in Instructional Humor**

In addition to the many types of humor in the classroom, research from the source perspective has also examined individual differences in instructional humor. This section reviews scholarship that has examined the individual differences of sex, teaching experience and acclaim, humor orientation, immediacy, and culture.

#### **Sex**

In the classroom, men generally tell more jokes than women and do so more frequently, but male and female instructors may also be using humor to serve different functions (Bryant et al., 1979; Sev’er & Ungar, 1997). In a study of instructor sex and humor functions, Sev’er and Ungar found that men used humor to enliven and entertain their classes, whereas women either avoided humor or used it to gain control of classroom disruption. Darling and Civikly (1987) found that students were more defensive when male teachers used nontendentious humor as compared to

female teachers, but students were more defensive when female instructors used tendentious humor as compared to male teachers. Male and female instructors also may be using different types of humor in the classroom. In their analysis of lectures given by 70 different instructors, Bryant et al. (1993) found that male professors told more jokes and stories, whereas female professors used more spontaneous humor. They also reported that the humor used by female professors was more relevant to the educational message than those of male professors, and Bryant et al. also noted that the male professors in their sample used more self-disparaging humor than the female professors. It is noteworthy that although the sex differences reported in these studies were statistically significant, the effect sizes were small. The inconsistent findings and small effect sizes regarding sex and humor echo the conclusions of Canary and Hause's (1993) meta-analyses on sex differences in communication. In their paper, Canary and Hause argued that reliance on sex role stereotypes, polarization of sexes, invalidity of measures of gender, and the absence of viable theory all contribute to the conflicting results and small effects in sex research regarding communication.

#### *Instructor Experience and Acclaim*

In addition to traits like biological sex, research from the source perspective has also examined characteristics of instructors, including teaching experience and whether they had won teaching awards. First, scholars have found that teachers with more experience tend to use more instructional humor than those with less experience. Javidi and Long's (1989) naturalistic study of 40 different college classes revealed large differences between experienced professors, who used 6.50 instances of humor per 50-minute class, and inexperienced graduate students, who used 1.60 humorous messages per class. This may not only be a function of experience but also status because lower-status individuals often have less freedom to use humor (Sev'er & Ungar, 1997). In addition to using more humor, experienced teachers also related humor to the course significantly more than less-experienced teachers (Javidi & Long, 1989).

Second, the characteristic of the instructor that is noteworthy concerns the humor production of award-winning, compared to nonaward winning teachers. There is some discrepancy with the amount of humor used by award-winning teachers compared to those without teaching awards, as Javidi et al. (1988) found that award-winning teachers attempted more humor than nonaward winning teachers and Downs et al. (1988) reported the opposite pattern. However, both studies revealed that award-winning teachers were careful not to attempt too much humor in the classroom. Furthermore, award-winning teachers used significantly more humor that was relevant to the course material, and their humor was used for the purpose of clarifying course content more than nonaward winning teachers (Downs et al., 1988; Javidi et al., 1988). These findings support the notion that it is not simply the use of humor, but how humor is used, that determines its effectiveness in the classroom.

### *Humor Orientation*

When considering how humor is used, researchers have found that some people have a predisposition to be funny, known as humor orientation (S. Booth-Butterfield & Booth-Butterfield, 1991). Humor orientation is considered to be a communication-based personality trait wherein those high in humor orientation have a predisposition to enact humorous messages and perceive themselves as successfully funny across many different situations (M. Booth-Butterfield et al., 2007; S. Booth-Butterfield & Booth-Butterfield, 1991; Wanzer, Booth-Butterfield, & Booth-Butterfield, 1995). Humor orientation is about the ability to produce humorous messages, not the ability to appreciate humor. High-humor oriented instructors are thought to have a more developed and complex schema of humor and hence, they have a wider repertoire of humorous communication behaviors to enact. Wanzer et al. (2010) found that high-humor orientation professors used significantly more humor than professors low in humor orientation. Additionally, Wanzer et al. found that more humorous professors used more varied types of humor, including more offensive, other-disparaging, self-disparaging, relevant, and irrelevant humor than less funny professors. These findings are similar to those of Frymier et al. (2008), who found that perceived instructor humor orientation was positively correlated with many different inappropriate humor behaviors. It may be the case that instructors high in humor orientation may be able to use inappropriate humor in the classroom without offending students because they are more skilled or because they are better able to establish a joking friendliness with their students (Frymier et al., 2008; Wanzer et al., 2010).

Humor orientation should assist instructors in relating to students better. Indeed, Aylor and Opplinger (2003) reported that humor orientation, and its ability to reduce psychological distance, also related to student–teacher interactions outside of the classroom. In their study, students who perceived their instructors as high in humor orientation were more likely to initiate, and be satisfied with, out-of-class communication with their instructor. Further, students were more likely to discuss their personal problems with their high-humor oriented instructors, which students reported helped foster meaningful teacher–student interpersonal relationships. The ability of humor to potentially create closeness between students and teachers relates to immediacy, which is addressed next.

### *Immediacy*

The term immediacy refers to messages that convey warmth, closeness, and involvement among interactants (Mehrabian, 1971). The purpose of immediacy is to create a more positive interaction between sender and receiver by signaling approach and availability, inducing positive psychological arousal, and conveying interpersonal closeness (J.F. Andersen, Norton, & Nussbaum, 1981; P.A. Andersen & J.F. Andersen, 2005). Rubin and Martin (1994) described immediacy as a person's ability to show the individuals around them that they are open for communication, both verbally and nonverbally.

Instructional communication scholars have criticized the immediacy research (e.g., Hess, Smythe, & Communication 451, 2001; Smythe & Hess, 2005). One of the problems with immediacy research is that despite Kearney's (1994) contention that the items from Richmond, Gorham, and McCroskey's (1987) Nonverbal Immediacy Measure (NIM) form a single factor, other researchers (e.g., Hess et al., 2001; Neuliep, 1995) have found the NIM to be multidimensional and strongly related to a number of other communication concepts. Similarly, Wanzer and Frymier (1999) found that perceptions of instructor humor orientation were related strongly and positively to perceptions of nonverbal immediacy. This is not surprising, given that many of the behaviors instructors enact when they are being humorous (e.g., smiling, vocal variety, gestures, and facial expressiveness) are also immediacy behaviors.

Given these issues, the relationship between humor and immediacy is complex and is not always easily defined from a source or receiver perspective. Although some research has treated humor as an example of teacher immediacy, and humor is often thought to increase students' perceptions of teacher immediacy (Javidi et al., 1988), the link between immediacy and humor is likely bi-directional, in that humor increases perceptions of immediacy but immediacy also influences how humor use is perceived. The immediacy of an instructor can play a role in how the effectiveness of humor is perceived; especially when the type of humor used is taken into account. Teacher nonverbal immediacy, along with their humor orientation and verbal aggressiveness, all play a role in student perceptions of appropriateness of humor (Frymier et al., 2008). For teachers who are not very immediate, the use of humor is most productive when it is focused on the content being taught. Personal stories, especially when they are not being used as teaching tools, will eventually be seen as digressions rather than effective teaching, especially for nonimmediate teachers (Gorham & Christophel, 1990; Grisaffee, Blom, & Burke, 2003). Further, Gorham and Christophel found that low immediacy instructors used more tendentious humor than teachers perceived as moderate or high in immediacy. For immediate teachers, however, inappropriate humor can be even more disruptive than for nonimmediate teachers. Negative or hostile humor can be seen as contrary to the warm and open style of immediate instructors, and because they have worked so hard to build a positive rapport with the students, negative humor is seen as a transgression that is worse for them than for teachers who are perceived as more distant in general (Gorham & Christophel, 1990). The relationship between humor and immediacy is further complicated by culture, which is the next variable considered.

### *Culture*

Teslow (1995) noted that, "styles of humor are culture-dependent" (p. 8). Since many studies of humor in the classroom have been limited to United States classrooms, the findings may not apply to nonwestern cultures. Researchers have argued that some of the most substantial differences between cultures are in the content of humor and perception of what is considered funny (Guegan-Fisher, 1975; Ziv, 1988). In a study

of humor orientation and classroom communication apprehension in Chinese college classrooms, instructor's humor orientation exacerbated student communication apprehension rather than reduced it (Zhang, 2005). Zhang explained that humor often identifies individuals and highlights deviations from group norms, which collectivist cultures may find stressful. In addition, instructional humor may make the classroom less formal, which Chinese students find inappropriate given the hierarchical nature of the instructor–student relationship in Chinese culture.

### **Effects of Instructional Humor**

In the previous sections of this paper, the research reviewed indicated that humorous communication behaviors occur with varying levels of frequency in the classroom, and are used for several different reasons. In the following section, research from a receiver perspective is reviewed that examines the effects of instructional humor, including: perceptions of instructors, classroom environment, and student learning.

#### *Instructor Evaluations*

Instructor evaluations are an important source of student feedback, as well as a pragmatic concern for faculty tenure and promotion. As humor is generally considered to be a positive form of communication used to create affinity between people (Bell & Daly, 1984; S. Booth-Butterfield & Booth-Butterfield, 1991; Frymier & Thompson, 1992), instructor evaluations should be related positively with humor use. Consistent with this idea, the use of positive and appropriate humor has generally been correlated positively with student evaluations of instructors (Bryant, Comisky, Crane, & Zillmann, 1980; Gorham & Christophel, 1990; Tamborini & Zillmann, 1981; Wanzer & Frymier, 1999). For example, Bryant et al. found that instructors who told more funny stories and jokes during class received better overall evaluations, and also were rated as having better delivery and being more effective. The popularity of teachers with a good sense of humor may be partly explained by student expectations. Although surveys of students have found that a sense of humor is consistently rated as one of the most desirable qualities of a successful instructor (Check, 1986; Fortson & Brown, 1998; Powell & Andersen, 1985), Frymier and Weser (2001) found that students do not necessarily expect instructional humor. Perhaps instructors who incorporate appropriate humor into their classrooms positively violate expectations of their students (Burgoon & Hale, 1988), leading to more positive overall teaching evaluations.

It is important to note that inappropriate and/or aggressive humor may harm student perceptions of an instructor. Gorham and Christophel (1990) found the amount of negative or aggressive instructional humor was related inversely to instructor evaluations. More recently Torok et al. (2004) surveyed 124 undergraduates and found that instructors' overuse of offensive humor and sarcasm were related negatively to students' evaluations of faculty.



*Classroom Environment*

Elements of emotional response theory (Mottet, Frymier, & Bebee, 2006) and the IHPT (Wanzer et al., 2010) predict that appropriate humor promotes positive affect, which should translate into a more pleasant educational setting. Consistent with these theories, researchers have found appropriate instructional humor to be related positively to an enjoyable learning environment (Bergin, 1999; Downs et al., 1988; Gilliland & Mauritsen, 1971; Kushner, 1988; Neuliep, 1991; Torok et al., 2004; Ziv, 1979). The positive affect generated through humor may improve the classroom environment by helping to relieve tension and student anxiety. Teslow (1995) noted that, “humor has long been recognized as a beneficial strategy in education as a tension reliever” (p. 9). The use of instructional humor to relieve tension may especially be useful for teaching topics that are generally perceived by students to be anxiety-provoking (Adams, 1974; Berk, 1996; Kher et al., 1999). Scholars have argued that when teachers can demonstrate that mistakes are natural and acceptable by laughing at their own errors, students may feel less anxious and more comfortable communicating and taking more risks in the pursuit of learning (Bryant & Zillmann, 1989; Cornett, 1986; Hill, 1988).

Again, when considering the effects of humor, appropriateness needs to be taken into account. Aggressive, negative humor has been shown to create an uncomfortable learning environment (Darling & Civikly, 1987; Harris, 1989; Saroglou & Scariot, 2002; Torok et al., 2004). Gorham and Christophel (1990) found that students are particularly aware of aggressive humor use, and they reported instructors’ tendentious humor use was related negatively to students’ motivation to learn and students’ liking for the area of study. Similarly, Stuart and Rosenfeld (1994) reported that hostile or negative instructor humor use was related negatively to perceptions of a friendly classroom environment and related positively to student defensiveness.

*Credibility*

Humor is, by definition, nonserious on some level (Martin, 2007; Provine, 2000), and one potential concern about instructional humor is its effect on credibility. Appropriate instructional humor may increase liking and make a classroom fun, but does it detract from an instructor’s credibility? Provine argued that historically leaders have been hesitant to display humor with their subordinates because they do not want to undermine their credibility. Instructional communication scholars have addressed the relationship between humor and credibility.

Consistent with Aristotle’s conceptualization, Teven and McCroskey (1997), identified credibility as a combination of three factors: expertise (i.e., the knowledge or authoritativeness of the source and the ability to competently make correct assertions); trustworthiness (i.e., the ability to convey information sincerely); and goodwill (i.e., whether the source has recipient’s best interest in mind). Generally, researchers have found instructor credibility to be related positively with appropriate instructional humor use (Frymier & Thompson, 1992; Frymier et al., 2008; Gorham

& Christophel, 1990; Gruner, 1967; Kaupins, 1991; Korobkin, 1988; Torok et al., 2004; Wrench & Punyanunt-Carter, 2005; Wrench & Richmond, 2004). For example, Wanzer and Frymier (1999) found that instructors high in humor orientation were perceived as more competent than those low in humor orientation, and Frymier and Thompson found positive correlations between facilitating enjoyment and perceptions of teacher competence and character. In an experimental study of humor use in CD-ROM texts, Houser, Cowan, and West (2007) found that humor significantly increased perceptions of instructor credibility, specifically perceptions of sociability, extroversion, composure and character. However, their humor manipulation did not increase perceptions of instructor competence. Similarly, Conkell et al. (1999) found that lectures using humor enhanced fitness instructors' likability, but humor use did not have an effect on the perceived expertise of the instructors.

Scholars have also suggested that inappropriate humor can negatively affect credibility. Gruner (1967) observed that a balance between humor and instruction must be maintained to avoid the perception that an instructor is "clownish" (p. 232). Zillmann (1977), Brusckie and Gartner (1991), and Gorham and Christophel (1990) also warned that too much humor could diminish teacher credibility. In addition to overusing humor, negative and/or aggressive humor, especially humor disparaging students, can harm instructor credibility, especially trust and goodwill (Berk, 1996; Torok et al., 2004; Wanzer et al. 2006).

### *Learning*

Instructional humor that is appropriate and positive may be an effective tool at increasing teacher evaluations and helping create a positive classroom environment, however, as Wanzer et al. (2010) noted, "many would argue that the most important reason is to enhance learning" (p. 2). Robinson (1983) argued that what is "learned with laughter is learned well" (p. 121), and there is a wealth of anecdotal accounts in support of Robinson's belief (e.g., Brown, 1995; Dodge & Rossett, 1982; Fitzsimmons & McKenzie, 2003; Garner, 2006; Gilliland & Mauritsen, 1971; Hall, 1969; Scott, 1976; Warnock, 1989). However, the empirical evidence for the effects of humor on learning is considerably more mixed, with some scholars finding that humor enhances learning (e.g., Chapman & Crompton, 1978; Davies & Apter, 1980; Gorham, 1988; Hauck & Thomas, 1972; Hays, 1970, Kaplan & Pascoe, 1977; Kelley & Gorham, 1988; Sanders & Wiseman, 1990; Wanzer & Frymier, 1999; Vance, 1987; Ziv, 1988) and others finding no relationship between learning from humor (e.g., Gruner, 1967; Houser et al., 2007; Kilpela, 1961; Markiewicz, 1972; Taylor, 1964; Youngman, 1966). The purpose of this section is to review key studies examining instructional humor and learning, focusing on variables theoretically linked with learning, as well as the methodological discrepancies that may account for the equivocal nature of the research findings. First, the relationship between humor and attention is reviewed.

There has been a substantial amount of empirical support for humor's ability to attract and maintain attention. Many of the early studies examined the effects of

educational television programming on the attention of young children. For example, Wakshlag, Day, and Zillmann (1981) reported that first- and second-grade children overwhelmingly preferred educational programs containing humor to programs without humor, particularly when the humor was fast-paced. Additionally, Zillmann, Williams, Bryant, Boynton, and Wolf (1980) found that humor was a useful device for attracting the attention of young children, and they suggested that educators employ frequent short bursts of humor to attract and maintain interest.

Despite the fact that humor is an effective means of gaining attention, empirical evidence is less favorable regarding the positive effects of humor on information acquisition and retention. There have been numerous studies that have found no improvement of learning with humor (e.g., Gruner, 1967; Kennedy, 1972; Markiewicz, 1972; Taylor, 1964; Youngman, 1966). For example, Bryant, Brown, Silberberg, and Elliott (1981) found that humorous visual illustrations did not increase information acquisition. Furthermore, some studies of educational television programming have found humor to actually harm the ability of children to understand material (Weaver, Zillmann, & Bryant, 1988; Zillmann et al., 1984). In these studies, children ranging in grade levels from kindergarten to fourth grade confused humorous distortions (e.g., irony and comical exaggeration) with factual information (Bryant & Zillmann, 1989). Interestingly, even when teachers added information in an attempt to correct the humorous distortions of information, tests of recall and retention revealed that the children remembered the humor and not the corrections. More recently, Houser et al. (2007) conducted an experiment examining the effects of nonverbal immediacy and instructional humor on perceptions of instructor credibility, student motivation, and student learning. The study manipulated nonverbal immediacy and humor in an instructional CD-ROM text. Houser et al. found that humor significantly increased perceptions of instructor credibility and student motivation, but there were no effects for humor on information recall.

Although the studies discussed above found that humor did not improve learning, other studies reported the opposite findings (Chapman & Crompton, 1978; Gorham, 1988; Hauck & Thomas, 1972; Hays, 1970, Kaplan & Pascoe, 1977; Kelley & Gorham, 1988; Sanders & Wiseman, 1990; Vance, 1987). For example, Kaplan and Pascoe argued that humor needs to be relevant to the instructional material to increase learning. They conducted an experiment where college students either received a lecture with relevant humor or a lecture without humor. The results indicated that humor improved learning of the lecture material up to six weeks after the lecture. Kaplan and Pascoe concluded that humor is most effective for learning when it is relevant to the academic material of interest. They posited that their results "can account for the inability of earlier research to demonstrate an effect of humor upon learning. The use of humor significantly increases recall for only those items based on humorous examples" (Kaplan & Pascoe, 1977, p. 65).

The conflicting findings regarding the effects of humorous communication on information acquisition and recall make it difficult to form unequivocal conclusions regarding the relationship between humor and learning. However, scholars have criticized several methodological shortcomings of previous research that may account

for the frequent failure to detect humor's positive influence on learning (Berk, 1996; Gorham & Christophel, 1990; Teslow, 1995; Wanzer & Frymier, 1999; Ziv, 1988). First, Ziv argued that many of the studies that failed to find a positive relationship between humor and learning were very short in duration. Ziv reviewed 18 experimental studies examining humor and learning and found that only four experiments lasted an hour or more. Ziv also reported that 12 of the studies lasted approximately 10 minutes, including all seven studies that found no relationship between humor and learning. Ziv argued that short studies lack ecological validity because class sessions are much longer and continue throughout a semester. Furthermore, the short duration is problematic in light of the theoretical mechanisms proposed to account for humor's ability to improve learning, many of which are based on long-term processes. Ten minutes is probably not enough time to form an association between learning and enjoyment that will motivate a student to try harder to learn, nor is it likely to be enough time to elaborate on material and store that information in long-term memory. The short duration of the Houser et al. (2007) humor manipulation is consistent with Ziv's analysis. Students in their study were only able to view the humorous instructor once, and Houser et al. noted that their results for learning may be a product of the lack of naturalness associated with their manipulation.

Second, both studies by Gorham and Christophel (1990) and by Wanzer and Frymier (1999) criticized previous research for failing to control for how humor was used in studies of learning. They argued that retention rates are likely to differ based on a number of different factors, including: the type of humor (e.g., cartoons versus funny anecdotes), the point when the humor is integrated into the lecture (e.g., during essential points versus randomly throughout), and whether or not the humor was relevant to the educational material of interest. Ziv (1988) argued that using humor irrelevant to the purpose of the lesson should not improve learning, and in fact, may inhibit information acquisition because the humor will be remembered better than the academic material. Furthermore, virtually none of the studies of humor actually conduct manipulation checks to see if the receivers perceived the humor inductions were funny (Wanzer & Frymier; Ziv).

Third, previous research has used disparate experimental methods which may account for discrepant findings. For example, studies have introduced humor through instructor lectures (e.g., Gibb, 1964; Kaplan & Pascoe, 1977), cartoons (e.g., Curran, 1972), audiotapes (e.g., Gruner, 1967; Kennedy, 1972; Kilpela, 1961; Taylor, 1964), and other means. The different methods of incorporating humor make it difficult to draw conclusions about how humor affects learning. Furthermore, the methods are not just diverse; many of them have ecological validity in terms of humor that would be actually be used in a classroom (Ziv, 1988).

In addition to criticizing previous research, Ziv (1988) and Wanzer and Frymier (1999) each conducted studies that provided compelling evidence for humor's ability to enhance learning. Wanzer and Frymier conducted a self-report study with 314 undergraduate students that examined how student perceptions of teachers' humor orientation were related to student perceptions of learning. Wanzer and

Frymier found that students' perceptions of teacher humor orientation were positively related to students' perceptions of effective learning and learning behaviors.

Ziv (1988) provided further evidence that humor can improve learning. He conducted two naturalistic experiments examining the effects of humor use in lectures on student performance. In the first experiment, Ziv randomly assigned two groups of students enrolled in a statistics course to a humor or no-humor groups. Both groups were instructed by the same professor, who was trained to use humor in the lectures according to Ziv's protocol. The humor was relevant to the lessons, delivered in the optimum dosage (see Ziv, 1981) of three to four jokes per lesson, and test items were constructed to pertain to the humorously presented concepts. Further, jokes were presented in a particular sequence: first, the concept was taught; second, the concept was illustrated with a joke; third, and after the laughter subsided, the professor paraphrased the concept. Ziv found the humor group outperformed the nonhumor group by approximately 10% on the final exam. He replicated his findings using a different professor, a different subject (psychology), and with different students the following semester.

*Humor in educational testing.* In addition to presenting humorous material in lectures to facilitate learning, scholars have also examined how humor incorporated into exams influences test scores. Scholars have suggested that incorporating humor into exam items may reduce the discomfort and anxiety experienced during testing situations, thereby improving performance (McMorris, Boothroyd, & Pietrangelo, 1997). There have been several experiments conducted investigating the effects of tests containing humor on anxiety and test performance (e.g., Blank, Tweedale, Cappelli, & Ryback, 1983; Brown & Itzig, 1976; Deffenbacher, Deitz, & Hazaleus, 1981; McMorris, Urbach, & Connor, 1985). The experiments involved randomly assigning participants to receive either a humorous or nonhumorous version of the same, typically multiple choice, test. The humor manipulation consisted of creating either funny question wording or comical response options.

The results of the research examining the effects of humorous test items on test performance have generally failed to demonstrate the effectiveness of humor in testing. McMorris et al. (1997) conducted a review of 11 studies examining humorous test items and test scores and concluded, "there was apparently only one statistically significant, defensible, and interpretable main effect for performance attributed to including humor on a test. That main effect was found for one test used in one study, and the humorous treatment was inferior" (p. 285). Although the lack of main effects is problematic for scholars advocating for the effectiveness of including humor on a test, the majority of research regarding humor in instructional testing hypothesized that trait anxiety moderates the effects of humor on test performance. Specifically, test humor was predicted to be most effective at increasing exam scores for highly anxious students and least effective for students with low trait anxiety (e.g., Smith, Ascough, Ettinger, & Nelson, 1971; Townsend & Mahoney, 1981; Townsend, Mahoney, & Allen, 1983). However, the results generally failed to support the predicted interaction. Only one study from McMorris et al.'s review reported a

significant interaction in the predicted direction, where highly anxious students performed better on a test that included humor than students low on anxiety (Smith et al.).

Conversely, several studies found statistically significant interactions in the opposite direction, where highly anxious students performed better on the nonhumorous tests than students low on trait anxiety scored on the humorous tests (Blank et al., 1983; Brown & Itzig, 1976; Townsend & Mahoney, 1981). Several other studies failed to find any significant interactions at all for humor and anxiety on test scores (Deffenbacher et al., 1981; J.J. Hedl, Hedl, & Weaver, 1981; McMorris et al., 1985). McMorris et al. (1997) summarized the research findings of the effects of humor on test performance as follows, “we found insufficient and inconsistent main effects and interactions to provide empirical support for using humor to raise scores” (p. 295).

In summary, although the research findings assessing the effects of humor on learning have been mixed, there is some convincing evidence that using humor can improve learning. The issue is how to use instructional humor effectively, which according to Bryant and Zillmann (1989), “depends on employing the right type of humor, under the proper conditions, at the right time, and with proper motivated and receptive students” (p. 74). Clearly, using competent instructional humor is complex and depends on a number of factors. In the next section, advice for educators is provided to guide them in using instructional humor effectively.

### Advice for Educators

Although the literature on humor and education is expansive, complex, and occasionally conflicting, the empirical research reviewed here suggests a few strategies for maximizing the positive effects of instructional humor. First, educators should use the humor that they are comfortable with. Humor is not a necessary requirement for effective instructional communication, and the literature on humor orientation suggests that the teaching style of the instructor should be consistent with his or her individual humor orientation (Wanzer & Frymier, 1999). If an instructor is low in humor orientation or comes from a culture that discourages humor use in the classroom (Zhang, 2005), they may find it difficult to use humor in the classroom and that is perfectly acceptable. Not everyone is funny, and Ziv (1988) commented that there are few things worse than an unfunny person trying to be humorous. However, in order for instructors low in humor orientation to benefit from the positive aspects of humor, they might consider incorporating a humorous video clip, or adding a cartoon to their slides can inject humor but make the burden of spontaneous humor less cumbersome.

Second, extant research indicates that the only appropriate humor is related with positive perceptions of the instructor and the learning environment. To build feelings of warmth and closeness with students, instructors should avoid negative or hostile humor, especially humor that isolates students from the teacher and class, or disparages students for their ignorance, inappropriate behaviors, or failure to grasp

lecture material. These types of humor, although they may be effective behavioral deterrents in some cases, are highly likely to create a climate of fear, anxiety, and even hostility in the classroom. Instead, teachers should utilize humor that laughs *with* students rather than *at* them.

Third, instructors need to make sure that their humor is appropriate for their audience, thus, audience's age and the context of humor have to be considered. Regarding age, instructors need to be particularly careful about confusing younger children with humor. Younger children may fail to understand irony, exaggerations, or distortions common to humor, and hence, they may inadvertently learn incorrect or inaccurate information. With older students, relevant humor should be utilized. With all age groups, the context of education needs to be of primary importance. Racist, sexist, or sexual humor may work in a comedy club, but it is inappropriate in an educational context. Additionally, nonstop humor is expected from comedians, but too much humor can harm the credibility of the instructor (Bruschke & Gartner, 1991; Gorham & Christophel, 1990). Ziv's (1981, 1988) research indicates approximately four jokes per class is optimal.

Related to appropriateness, it is important to recall that humor has both a cognitive and an affective element and applying IHPT (Wanzer et al., 2010), if students do not understand an instructor's humor, they will be unable to process it. For this reason, references to humorous scenes from older television programs or films may be funny to an instructor but will confuse rather than amuse students. Additionally, political humor may not work in a classroom unless students are especially politically aware. Our advice is to incorporate relevant humorous anecdotes or show a media clip rather than describe it. As a specific example, let us imagine an instructor is teaching how nonverbal communication is more trusted than verbal communication, especially when they are incongruent. An instructor may humorously relate an anecdote about how a communicatively challenged boyfriend asks his girlfriend if it is okay if he cancels their dinner plans to go play poker with his buddies. She crosses her arms and coldly replies, "Do whatever you want. I don't care." The boyfriend then replies, "Great!" and leaves. Even though he was told that she does not care, the body language indicates something else entirely. If instructors are not comfortable telling an anecdote similar to this one, they could incorporate humor by showing a media clip. For example, in Season 15, episode 12 of *The Simpsons*, Bart and Lisa are having an argument, and Bart is not picking up on Lisa's negative nonverbal communication. Homer tells Bart, "When a woman says nothing's wrong, that means everything's wrong. And when a woman says everything's wrong, that means *everything's* wrong. And when a woman says something's not funny, you'd better not laugh your ass off."

Fourth, if the goal of instructional humor is to increase learning and retention of course material and not merely to lighten the mood, specific steps should be followed. The instructional humor should illustrate a concept that has just been taught, and instructors should then paraphrase the material again after the laughter subsides (Ziv, 1988). Using humor in this manner has two theoretical advantages for learning. One is humor's ability to enhance recall of concept material. Learning requires information to be remembered. The second is humor's ability to heighten

attention and interest. Paraphrasing the concept again after the humor reinforces the information and enhances learning. When these steps are used in conjunction with exams that test the humorous concept material, scores should increase.

## Conclusion

### *Research Summary*

In evaluating over 40 years of research on humor and education, general conclusions about the effects of instructional humor as well as directions for future research can be reached. The use of humor is a prevalent communication behavior in pedagogical settings and serves different purposes. The clearest findings regarding humor and education concern the use of humor to create learning environment. The use of positive, nonaggressive humor has been associated with a more interesting and relaxed learning environment, higher instructor evaluations, greater perceived motivation to learn, and enjoyment of the course. Conversely, the use of negative or aggressive humor aimed at students has been associated with many of the opposite outcomes, including a more anxious and uncomfortable learning environment, lower evaluations of instructors, increased student distraction and less enjoyment of class.

Although the research assessing the impact of humor on actual learning is rather mixed, there is substantial empirical evidence that humor can enhance recall and aid learning. Correlational research has found that instructors' humor orientation is associated positively with student perceptions of affective learning and learning behaviors, especially for students with high humor orientation (Wanzer & Frymier, 1999). Laboratory experiments (e.g., Schmidt, 2002) have repeatedly demonstrated that, when context is held constant, humorous information is recalled more easily than nonhumorous information. Additionally, naturalistic experiments revealed that humor-treatments increased test scores compared to no-humor controls (Ziv, 1988).

### *Future Directions*

In addition to compiling research findings from over four decades of research, the present review suggests several directions for future research on humor and education. There is an overall need for more systematic research examining the effects of humor on specific educational outcomes and replicating findings from previous research. Studies that examine instructors' self-reports of humor use have provided a starting point for research on humor in the classroom, but there is a dire need for more naturalistic research, both descriptive and experimental. For example, the work of Bryant et al. (1979) and Javidi and colleagues (e.g., Downs et al., 1988; Javidi et al., 1988; Javidi & Long, 1989), in which instructor lectures were unobtrusively recorded, provided a rare glimpse into how instructors use humor naturalistically. However, those studies are more than two decades old. Current research needs to investigate how humor use has changed in educational settings since then. Naturalistic experimental research on humor in educational settings is even less prevalent. The experimental work of Ziv (1988) on the effects of humor lectures on learning is a



groundbreaking effort, but similar research is needed to provide objective empirical evidence for how humor influences learning in the classroom.

In terms of specific areas for future research, there is a need to examine if humor can be successfully taught to teachers. Although Wanzer and Frymier (1999) suggested that instruction in humor could be added to teacher training to help instructors become more immediate, the research on the humor orientation seems to suggest that humor comes more naturally to some instructors and does not come naturally to others. M. Booth-Butterfield and Wanzer (2010) argued that although training is unlikely to change instructors' humor orientation from low to high, as with several other communication skills, humorous communication behaviors can be improved with training and practice. This is an important issue in need of systematic research.

Another area of scholarship that needs further investigation is how instructional humor interacts with culture. American classrooms at all levels of education continue to be more diverse, and the influence of humor on different cultures and subcultures is not well understood. Zhang (2005) demonstrated that humor may be an inappropriate in cultures that value a highly formal educational style. Normative expectations of other cultures regarding humor and education should be studied as well.

Researchers interested in studying instructional humor may also consider investigating the role of technology in humor. As online classes and interactive options increase, there are new opportunities and challenges for integrating humor into instruction, and more investigations similar to Houser et al. (2007) are needed. Students with a high humor orientation may prefer humor in their instruction, and new technologies could facilitate a more individualized educational experience. Future research is needed to examine the interaction of humor and technology on instructional outcomes.

Finally, there is a need for more theoretical development regarding instructional humor. Wanzer et al.'s (2010) IHPT is a significant contribution in this area, but rigorous experimental research is needed to test and advance the theory. In addition, more theoretical work is needed on how humor affects creative thinking in the classroom. Another area that is understudied and theorized concerns the negative effects of humor. Also, theoretical development is needed to show the ways in which humor helps make information more understandable.

## Notes

- [1] When conducting a large-scale review, the issue of exhaustiveness naturally arises. It should be made clear that this review is an attempt to synthesize the key findings from over 40 years of research rather than provide a summary of every study ever published concerning humor and education. Page limits prohibit an exhaustive review.
- [2] The three main theories discussed here have several different labels. Superiority theory is also known as aggression, disparagement, and degradation theory. Incongruity theory is sometimes labeled incongruity resolution theory when the resolution element is emphasized. Arousal theory is sometimes referred to as arousal relief.

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