What is Child-Directed Interaction? Evaluating the use of Jeopardy to Increase Child-Directed Interaction Knowledge Retention

by

Tonya E Filz

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Approved by

Elizabeth Brestan-Knight, Professor of Psychology
Aimee Callendar, Assistant Professor of Psychology
Alejandro Lazarte, Associate Professor of Psychology

Abstract

In recent years Parent-Child Interaction Therapy (PCIT) has continued to grow and evolve as an empirically supported treatment for children with disruptive behavior disorders. As a result of this growth, PCIT International has set forth a training protocol for mental health providers to learn PCIT techniques. However, there is a relative lack of research demonstrating how and why these training protocols work, or how they could be improved. The present studies seek to investigate the utility of using the game Jeopardy to review Child-Directed Interaction (CDI) information given during a didactic lecture. Study 1 addressed the effect of using Jeopardy in an upper level undergraduate classroom following a live lecture. In an extension of this method, Study 2 explored the utility of Jeopardy in small groups of undergraduates following a recorded lecture. Results of both Study 1 and Study 2 demonstrate that participants who reviewed CDI information using Jeopardy did not significantly differ from participants assigned to the review as usual (RAU) groups. Implications for the format of PCIT training workshops and future directions are discussed.

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PCIT	Parent-Child Interaction Therapy
ECBI	Eyberg Child Behavior Index
PSI-SF	Parenting Stress Index – Short Form
DPICS	Dyadic Interaction Coding System
CDI	Child Directed Interaction
PDI	Parent Directed Interaction
RAU	Review As Usual
EST	Empirically Supported Treatment

What is Child-Directed Interaction? Evaluating the use of Jeopardy to Increase Child-Directed Interaction Knowledge Retention

Training is paramount for mental health professionals to be able to successfully implement new treatment techniques into their practice (Herschell et al., 2009; Miller, Yahne, Moyers, Martinez, & Pirritano, 2004). There are few training protocols in place for mental health professionals seeking additional training outside of graduate training (Addis, Wade, & Hatgis, 1999; Miller et al., 2004). However, given the recent push for the dissemination and implementation of empirically based practice in psychology, more professionals are interested in developing and attending trainings (Herschell, Kolko, Baumann, & Davis, 2010; McHugh & Barlow, 2010). Ideally, these trainings should specify the minimum requirements to qualify for training, what is covered in training, how much time training takes, and how much follow-up supervision is required (Miller et al., 2004).

Overview of Parent Child Interaction Therapy

In this section, we will introduce one empirically-based parent training protocol that is gaining momentum and we will discuss the training requirements for that program, as well as the strategies that are currently used to train therapists. One treatment that is gaining momentum in dissemination and implementation is Parent-Child Interaction Therapy (PCIT), an empirically based treatment designed to treat children between the ages of 3 and 7 (for more information on the PCIT model, the interested reader is directed to Eyberg & Boggs (1989) and McNeil & Hembree-Kigin (2010). In 2013, PCIT International released updated training requirements for

certification as a PCIT therapist (available at www.pcit.org). Current requirements specify that PCIT trainees must possess at least a master's degree in the mental health field, however, doctoral students in psychology who are supervised by a licensed mental health service provider who have at least 3 years of graduate training are also eligible to participate in PCIT training. PCIT trainees must also work with families and children and must either be licensed or supervised by someone who is licensed in a mental health profession (e.g., Licensed Clinical Social Worker, Licensed Clinical Psychologist). Finally, the trainee's agency must have the facilities to allow the trainee to conduct PCIT and must serve children between the ages of 3-7 years old.

Once a trainee meets the requirements to start training, trainees are provided with either 10 hours of online training and 30 hours of face-to-face training or 40-hours of face-to-face contact with a PCIT trainer. Specific skill requirements that trainees are required to meet during training, including being able to administer, score, and interpret assessments used in PCIT (e.g., the Eyberg Child Behavior Index (ECBI) and Parent Stress Index – Short Form (PSI-SF), meet a minimum inter-rater reliability of 80% with a PCIT trainer in a 5-minute period of continuous DPICS coding (either live or on video), and demonstrate both Child Directed Interaction (CDI) and Parent Directed Interaction (PDI) related therapist skills. Trainees are then required to obtain regular supervision from a PCIT trainer and see two cases to completion as either a primary or equal co-therapist. Lastly, trainees complete a final skill review that evaluates a trainee's ability to teach CDI and PDI skills to the parents through didactic instruction, role-playing, and modeling. Trainees must also demonstrate the ability to conduct coaching sessions as outlined in

the PCIT manual. Once trainees complete all components of the training requirements, they are eligible to apply for certification as a PCIT therapist.

Though the above training requirements are endorsed by PCIT International, the precise manner that PCIT training is provided varies by institution and trainer. One variation of PCIT training was described in Pearl et al. (2012), in which trainees received 30 hours of training broken into a 3-day block and a 2-day block of time separated by several weeks. Another variation of PCIT training was described in Herschell et al. (2009), which describes a model of training that outlined five unique phases of training. The first phase of training provides trainees with individualized coaching on developing a PCIT program. Three months later the trainees receive the second phase of training, which included a two-day workshop on CDI skills. Next, trainees receive intensive and advanced skill building (phases 3 and 4 respectively). Lastly, trainees receive consultation and supervision (phase 5).

Training plays an essential role in successfully disseminating PCIT, however, there are few studies at the present time indicating specific formats or mechanisms that make the PCIT training protocol effective. In an attempt to understand the effective training mechanisms, Herschell et al. (2009) randomly assigned 42 trainees to either didactic or experiential training. Participants assigned to didactic training reviewed and coded client videotapes and discussed PCIT skills, but did not receive individualized feedback. In the experiential group, participants reviewed videos to practice coding, participated in role-plays, and received individualized feedback. Interestingly, despite the more individualized focus of the experiential group, there were no significant differences in skills or knowledge between groups. Following an intensive

two day training for both groups, all participants saw an increase in knowledge, however, relatively few participants in either group (5%) met mastery criteria for CDI-related parent skills (e.g., 25-50 descriptions and reflections, reflecting ½ of child's verbalizations, 15 labeled and unlabeled praises with no fewer than 8 being labeled praises, and 0 commands, questions or criticisms), coaching skills (e.g., trainee coaching behaviors towards parent), or DPICS-III coding. Clearly, there is additional work needed to discover how PCIT training can be improved. One area that could be helpful for PCIT trainers is to examine the effectiveness of specific training techniques and modalities commonly used during PCIT training workshops on various training outcomes (e.g., trainee retention of information over time).

Recently, PCIT International issued standardized slides to be used by master trainers in training workshops; however, there are no standardized training protocols for utilizing supplemental learning activities (e.g., reviewing information, conducting games, testing knowledge, etc.) Thus, there is likely variation in how trainers taught the PCIT protocol and skills across studies. In addition to variations in training, there is likely variation in the amount and type of review strategies trainers' use. Anecdotally, one review strategy that has been implemented widely by PCIT trainers is PCIT Jeopardy, a game that has been used to enhance review of information and build rapport during the initial 40-hour PCIT training. Although trainers use PCIT Jeopardy as a teaching tool to increase retention and enjoyment in the learning process, there have been no evaluations of PCIT Jeopardy as a pedagogical technique in the context of training to date.

Educational Games in Healthcare

This section will focus on the current research in educational games, including advantages and disadvantages of active learning strategies, in the dissemination of information both in healthcare. Despite an increasing need, there is presently a dearth of quality studies that explore the use of active learning strategies in dissemination literature in both mental health care and health care settings. In fact, in a recent Cochrane review of educational games by Akl & Kairouz (2013) used to improve training for healthcare professionals only two out of 2025 studies screened met the following inclusion criteria: 1) A treatment group that included an activity that required participation based on clear rules and was not a role playing intervention, 2) Had a control group that received either no intervention, a standard educational activity, an untargeted activity, or another intervention, 3) Treatment activity included only health professionals, 4) Included a thorough description of the game, and 5) Was not a review. Of the two studies that met criteria for inclusion, there were still significant limitations including small sample sizes that limited the statistical power to detect differences between treatment and control groups, and a lack of patient outcome measures (Akl & Kairouz, 2013). As a result of an overall dearth of studies and significant limitations of studies review, Akl and Kairouz (2013) were not able to support or refute the use of educational games in training healthcare professionals.

To explore ways that training can be improved, one can turn to the vast literature on learning strategies commonly used in the classroom setting. Existing research suggests that active learning techniques are at least as effective, if not more effective than using traditional teaching methods (e.g., lectures) (McCarthy & Anderson, 2000). One type of active learning

that is increasing in popularity is using games such as charades (Selby, Walker, & Diwakar, 2007), Snakes and Ladders (Telner & Bujas-Bobanovic, 2010), Family Feud (Burke, 2001), and Jeopardy (Azriel, Erthal, & Starr, 2005; Bayer-Hummel, 2010; Cook, 1997). However, it is important to note that not all games have been shown to be effective in fostering student's retention of information. For example, students who played charades had significantly lower exam scores than students who received an interactive lecture (Selby et al., 2007). One potential explanation for why charades may not have been effective is that the game may have been distracting for students, thereby causing them to focus more on the skits and less on the content and meaning of the material being acted out in the skits (Selby et al., 2007). Furthermore, noteworthy disadvantages of active learning strategies include high costs associated with materials, design, and set up (Walljasper, 1982) and potential for participant stress or embarrassment (Lewis, Saydak, Mierzwa, & Robinson, 1989).

Despite some disadvantages noted in the literature, several games have demonstrated an advantage in information retention over typical review strategies. Games that have demonstrated an advantage in information retention include Family Feud (Burke, 2001), Snakes and Ladders (Telner & Bujas-Bobanovic, 2010), and Jeopardy (Khan, Telmesani, & Alkhotani, 2011). When used with a video based lecture, Family Feud yielded increased scores on a delayed test of knowledge retention when compared to a video based lecture without an active learning component (Burke, 2001). Snakes and Ladders has also been shown to have better outcomes than traditional teaching methods for initial acquired information, however, retention rates over a 3 month latency period were similar to trainees who took a traditional continuing education course

for physicians (Telner & Bujas-Bobanovic, 2010). Out of all games, by far, Jeopardy is the most researched and demonstrates the most promise for both short and long term knowledge retention (Khan et al., 2011; O'Leary, Diepenhorst, Churley-Stron, & Magrane, 2005; Shiroma, Massa, & Alarcon, 2011; Telner & Bujas-Bobanovic, 2010).

The Utility and Effectiveness of Jeopardy

This section will discuss the contexts Jeopardy have been used in, studies similar to the present study, Jeopardy formats, and outcomes. Jeopardy has been used in a variety of contexts including nursing (Bayer-Hummel, 2010), management courses (Azriel et al., 2005; Benek-Rivera & Mathews, 2004), complex accounting law (Cook, 1997), marriage and family courses (Grauerholz, 1991), chemistry (Keck, 2000), medical school (Khan et al., 2011), statistics (Lee Revere, 2004), psychopharmacology (Shiroma, Massa, & Alarcon, 2011), obstetrics and gynecology (O'Leary et al., 2005), continuing medical education (Telner & Bujas-Bobanovic, 2010), and library instruction (Walker, 2008). Jeopardy has also been used as a pedagogical technique with a wide variety of populations including undergraduates (Grauerholz, 1991; Keck, 2000; Lee Revere, 2004), medical students (Khan et al., 2011; O'Leary et al., 2005; Shiroma et al., 2011), and business, law, and medical professionals (Azriel et al., 2005; Benek-Rivera & Mathews, 2004; Cook, 1997; Telner & Bujas-Bobanovic, 2010).

Of the Jeopardy studies reviewed, only one includes methods similar to the present study. Khan et al. (2011) randomly assigned 84 senior medical students to learn new information on viral exanthema in either a traditional lecture format (n=42) or in a Jeopardy format (n=42). All students in the study were given a pretest, posttest, and a second posttest after a 2-month latency

period. Though scores significantly increased from pretest to posttest for both conditions in the first posttest, scores between the groups were not significantly different. However, in the second posttest students assigned to the Jeopardy condition maintained similar scores to the initial posttest, while students assigned to the lecture format showed a significant decrease in scores from the initial posttest to the final posttest. This study, along with others (Revere, 2004), continues to lend support for Jeopardy as a potentially effective method for increasing long-term retention of information.

The traditional set-up for Jeopardy review in classrooms or trainings is much like the popular television show. The game is divided into 5 subjects with 5 questions in each subject. Questions typically range from 10-50 or 100-500 points with higher point values indicating more difficult content. Participants are divided into teams and take turns selecting questions. The first team who provides a correct answer is awarded the points and choses the next question. Teams range from a few students to dividing a class in half (Azriel et al., 2005). At the end of Jeopardy, teams enter final Jeopardy and wager points earned during the game. Instead of money that is awarded on the television show, the winning team in educational settings is typically given a small prize, such as candy.

Alternate designs of Jeopardy have been employed such as assigning students to write the Jeopardy questions (Grauerholz, 1991), placing a time-limit for groups to answer questions (Keck, 2000), and having students respond in short answers rather than the traditional question format (Lee Revere, 2004). In addition to various designs, Jeopardy has been used to review information following a brief lecture (Walker, 2008), prepare students for an exam (Azriel et al.,

2005; Grauerholz, 1991; Keck, 2000), acquire knowledge following a brief 45-minute lecture on psychopharmacology (Shiroma et al., 2011), and even as a stand alone exam (Lee Revere, 2004).

Despite the vast literature on Jeopardy, research is somewhat divided on the overall effectiveness of using Jeopardy in the classroom. Some researchers have demonstrated that though Jeopardy is overall a fun and engaging study technique, test scores remained the same between students who reviewed material using Jeopardy and students who reviewed material using standard review strategies (Azriel et al., 2005; Bayer-Hummel, 2010; O'Leary et al., 2005; Shiroma et al., 2011). However, many of these studies had relatively small sample sizes ranging from 36-84 students, which may have contributed to the lack of significant differences. Conversely, other researchers have found higher mean scores on exams (Lee Revere, 2004) and better long term retention for students in the Jeopardy condition (Khan et al., 2011).

When engaging in active learning techniques, one concern is student participation. Benek-Rivera (2004) indicates that student participation ranges from very engaged to somewhat "tuned out." The vast majority of studies, however, report that students as a whole became quite competitive and engaged in Jeopardy (Benek-Rivera & Mathews, 2004; Grauerholz, 1991; Lee Revere, 2004; Walker, 2008). Additionally, students also tended to ask better questions regarding the content of the exam rather than the format (Grauerholz, 1991), were more likely to prepare in advance so as not to miss out on Jeopardy (Benek-Rivera & Mathews, 2004), and reported feeling more prepared for the test (Bayer-Hummel, 2010; Benek-Rivera & Mathews, 2004). One concern that teachers and students alike may face when working in teams is social loafing, however, students in one study did not report that social loafing was an issue while playing

Jeopardy (Benek-Rivera & Mathews, 2004). Indeed, student participants across several studies have rated Jeopardy as an enjoyable, effective, and helpful exam preparation technique (Bayer-Hummel, 2010; Benek-Rivera & Mathews, 2004; Cook, 1997; Khan et al., 2011; O'Leary et al., 2005; Lee Revere, 2004; Shiroma et al., 2011; Walker, 2008).

Clearly, Jeopardy can have positive effects on engagement, and potentially, learning and long-term retention. Given the importance that therapists participating in PCIT training retain high levels of knowledge due to the very "dense" nature of PCIT (e.g., use of complex DPICS coding, highly-manualized, etc.), Jeopardy could prove to be beneficial for PCIT trainees. At the present time there is no research on using games in PCIT training, however, Jeopardy has been used successfully in a continuing education course for physicians (Telner & Bujas-Bobanovic, 2010), a population comparable to mental health professionals seeking additional training in PCIT. Thus Jeopardy may also benefit established therapists receiving PCIT training several years after completing their graduate education (Telner & Bujas-Bobanovic, 2010). Additionally, Jeopardy could be used to present information in a diverse fashion, which Bellg et al. (2004) suggest is important for effective training.

Key Mechanisms Involved in Jeopardy

This section introduces the mechanisms involved in Jeopardy, specifically in terms of learning and enjoyment. Using Jeopardy to review didactic information will likely lead to greater retention of PCIT information by the following specific mechanisms shown to increase retention of information through previous research: team based learning (Hernandez, 2002; Nieder, Parmelee, Stolfi, & Hudes, 2005, Nieder et al., 2005), motivation/competition (Benek-Rivera,

2004; Seifert & O'Keefe, 2001), and rapport-building (Catt, Miller, & Schallenkamp, 2007; O'Leary et al., 2005; Revere, 2004). Several additional studies have further indicated that training material should be presented in an engaging (Garris, Ahlers, & Driskell, 2002; Ricci, Salas, & Cannon-Bowers, 1996; Telner & Bujas-Bobanovic, 2010) and novel (J. R. Anderson et al., 2004; Garris et al., 2002) format to improve long term retention. Enjoyment that is reported by students who are given the opportunity to learn material using a game format is likely due to a variety of factors including the use of team based learning strategies and presenting information in an engaging manner (Catt et al., 2007; Ford, Smith, Weissbein, Gully, & Salas, 1998; Gomez, Wu, & Passerini, 2010). Furthermore, enjoyment may foster rapport between instructors and students (Kember & Leung, 2005). We hypothesized that participants who reviewed material using Jeopardy would enjoy the activity more, and that increased enjoyment would contribute to improved learning outcomes. Thus, for the purposes of Study 2 we also explored the role of enjoyment in the utility of Jeopardy.

Enjoyment of the learning and review process fosters several preconditions for learning including activating cognitive resources and commitment to learning process through a variety of mechanisms which likely contribute to improved learning outcomes (Fend, 1997; Pekrun, Goetz, Titz, & Perry, 2002; Pekrun, 2006). A specific mechanism behind enjoyment in the learning process, which may foster optimal learning, is that enjoying learning and the ability to demonstrate mastery of learning reinforce one another in a reciprocal manner (Peckrun, 2006). Enjoyment may also improve learning outcomes through strengthening intrinsic and extrinsic motivation, and decreasing emotions that hinder the learning process (e.g., boredom,

hopelessness) (Pekrun, 2006). Another specific mechanism Jeopardy offers to foster improved learning outcomes is by creating an environment that fosters student involvement, which has been shown to increase enjoyment ratings (Fry & Coe, 1980; Tricket & Moos, 1974). Despite the important preconditions Jeopardy offers the majority of students, Pekrun (2006) cautions readers that utilizing a highly competitive learning structure (e.g., Jeopardy), though enjoyable for high-achieving students, may be less beneficial to low-achieving or highly anxious students.

Despite an overall dearth of quality studies examining the use of Jeopardy (or similar teaching/review strategies) several benefits of using Jeopardy as either a teaching or review strategy include increased engagement in the learning process (Bayer-Hummel, 2010; Garris et al., 2002), higher test scores (Khan et al., 2011; L Revere, Elden, & Bartsch, 2008), and increased enjoyment (Benek-Rivera & Mathews, 2004; Garris et al., 2002; O'Leary et al., 2005; Shiroma et al., 2011; Telner & Bujas-Bobanovic, 2010) over traditional teaching strategies. However, the aforementioned benefits have not been reliably replicated in all studies or with all games. In fact, a game like Charades, though enjoyable, was associated with poorer performance on exams by distracting students from the content of the game (Selby et al., 2007). Though no existing studies demonstrate that Jeopardy impedes performance, several studies have shown no difference in outcome measures (e.g., exam scores, skill mastery, long-term knowledge retention) when compared to traditional techniques (e.g., traditional question and answer review) (O'Leary et al., 2005; Telner & Bujas-Bobanovic). It is possible, however, that Jeopardy may impede performance for a select group of students who are low achieving or highly anxious (Pekrun, 2006).

Goals of the Study

Given the lack of studies and inconsistency in study findings, several questions still remain regarding the utilization of Jeopardy in training mental health professionals. The present studies seek to add to the literature on the utilization of Jeopardy as a review strategy and examine for the first time the utility of Jeopardy in the context of PCIT dissemination. Specifically, will reviewing PCIT material using Jeopardy result in student learners demonstrating better long-term retention than those who review material using standard strategies? Does review using Jeopardy lead to an immediate advantage over traditional review strategies? Is Jeopardy more enjoyable than traditional review strategies? And finally, do the benefits of Jeopardy justify the amount of time and resources necessary to set-up and implement the game during a 40-hour training workshop? The current study seeks to evaluate the utility of Jeopardy as a review strategy in a simulated PCIT training with undergraduate volunteers.

Hypotheses

Undergraduate participants were used in a simulated training as a result of a lack of access to sufficient numbers of mental health trainees interested in PCIT. It was hypothesized that participants who received Jeopardy as part of a simulated training would have better long-term retention of PCIT information than students who receive RAU only. It was further hypothesized that participants who received Jeopardy would have significantly better scores than the RAU group on the post-test immediately after receiving information about PCIT. Finally, it was hypothesized that participants who received Jeopardy for review would demonstrate significantly higher levels of enjoyment, relative to a RAU group

Study 1: Exploring the utility of Jeopardy in the retention of CDI knowledge in the undergraduate classroom

Participants

415 undergraduate students were approached to participate in Study 1 during the Spring 2013 semester (see Table 1 for a complete description of participants by class and time period). Data were collected from two Abnormal Psychology sections, one Developmental Psychology course, and one Psychology of Learning courses, however, only 218 of the 415 undergraduates approached for the study enrolled in Study 1. Students under 19 years of age or who completed only one assessment point from the study (n = 93) were dropped from the final analysis. Of the 125 students included in the analysis, 42 received Jeopardy and 83 received RAU following a guest lecture on CDI.

Participants included in analysis were primarily female (63%) and Caucasian (67%). Fifty-nine percent of the sample reported having prior experience working with children and 66% of the sample reported having plans to attend graduate school. Participants ranged in age from 19-26 (*M*=20.65, *SD*=1.28). Self-reported GPA ranged from 1.5-4.0 (*M*=3.36, *SD*=.51). Years of college education ranged from 2-7 (*M*=3.30, *SD*=.52). The most common major listed by participants was Psychology (27.2%), followed by Biomedical Science (13.6%), and Exercise Science (12%). There were no significant differences between participants assigned to RAU and those assigned to Jeopardy in terms of age, race, gender, year in school, GPA, prior experience with children, prior experience with PCIT, or intentions on attending graduate school.

Measures

Demographic Questionnaire. A demographics questionnaire included questions regarding participant's age, gender, ethnic background, year in school, major, and GPA. Additional questions queried the amount of experience participants had with courses that focus on children and/or families, working with children, whether or not participants planned to attend graduate school, and whether or not participants had previous experience with PCIT.

Parent-Child Interaction Therapy Content Quiz – CDI (PCIT Quiz). The primary investigator adapted a quiz that is commonly used in PCIT trainings at Auburn University to test trainee knowledge (Lee, Wilsie, & Brestan-Knight, 2011). The revised quiz contains 15 multiple-choice questions and was adapted to focus on only the Child Directed Interaction (CDI) phase of PCIT (see questions 1-15 in Appendix A). The PCIT Quiz was given before students received a lecture (pre-test).. Additionally, students were sent the PCIT Quiz immediately after the lecture and review activity and had 2 days to complete the immediate post-test (post-test). One month after receiving the CDI lecture, participants were sent the follow-up post-test and had 2 days to complete the follow-up posttest (α=.98).

Procedure

Recruitment. Participants were recruited to participate in Study 1 via e-mail 2 days prior to receiving a guest lecture on CDI. If students agreed to participate, they completed the demographics questionnaire and the PCIT Quiz (at pre-test, post-test, and follow-up) online via a Qualtrics survey.

Pre-test. Participants were e-mailed the pre-test recruitment e-mail 2 business days prior to their class receiving the CDI lecture. When participants had one day left to complete the pre-test they were sent a reminder email. Within the email that contained the pre-test, participants were also sent the demographics questionnaire to complete. The pre-test was closed prior to participants receiving the lecture to ensure participants did not complete the pretest after receiving the lecture.

CDI Lecture. All participants received a 30-minute lecture about the CDI portion of PCIT. The lecturers were provided by either an upper level graduate student with both PCIT training and therapy experience or a PCIT Master Trainer with 14 years of teaching experience and 19 years of PCIT therapy and research experience. The CDI lecture material was adapted for the current study from material used in PCIT trainings with mental health professionals. The lecture slides were standard between the two lecturers and included information on what PCIT consists of, an explanation of the CDI process and caregivers' role, and information on the PRIDE skills used in CDI and how they are presented to the caregiver. During the lecture, students were able to take notes as most instructors indicated that information from the guest-lecture may appear on exams. Participants were instructed not to use their notes to take quizzes, however, there is no way to ensure participants did not use their notes during subsequent assessments. Live lectures were given to classes with enrollment ranging from 55-104 students per class. Whole classes were randomly assigned to either Jeopardy or RAU. Two of the participating classes received Jeopardy following the lecture, and two of the classes received RAU. See Table 1 for specific numbers of participants resulting from each class.

Jeopardy. Following the CDI lecture, students assigned to the Jeopardy condition were divided into 2-4 teams consisting of 10-30 students, depending on the class size. The five Jeopardy categories used in the study were: 1) Do skills, 2) Don't skills, 3) Homework and Mastery, 4) CDI in Action, 5) Miscellaneous. The preceding categories were selected for inclusion because they best represented the material covered in the CDI lecture. Specifically, Do Skills, Don't Skills, and CDI in action allowed participants to rehearse material related to PRIDE skills discussed in the lecture. Homework and Mastery allowed participants to rehearse information regarding the caregiver's role in treatment. Finally, the miscellaneous category allowed participants to rehearse information regarding background information on PCIT and CDI, and more theoretical questions regarding how and why PCIT works (e.g., "This skill helps improve and increase child's speech."). Point values ranged from 10-50 points within each category, with increased point value associated with increased difficulty (see Appendix B). Jeopardy was led by the same person who gave the CDI lecture (i.e., either the upper-level graduate student or PCIT Master trainer). Participants had the opportunity to discuss with team members before "buzzing in" by raising their hand. If a team provided an incorrect answer, the team lost points and the remaining teams had an opportunity to answer the question. To accommodate the 50-minute class period available to researchers, students played Jeopardy for 20 minutes before entering final Jeopardy during which teams were able to wager as many points as they wished. The final Jeopardy question was, "Who invented PCIT?" and the answer was mentioned only briefly early in the lecture. Credit for the final Jeopardy question was granted if

either the first or last name were phonetically correct. Participants who won Jeopardy were given a small piece of candy as a prize.

Review as Usual. Participants assigned to the RAU condition reviewed the same information and questions covered in the Jeopardy condition. RAU was conducted by the same person who gave the CDI lecture (i.e., either the upper level graduate student or the PCIT Master trainer). However, instead of reviewing the material in the Jeopardy format, students were asked the same questions that participants in the Jeopardy condition were asked (see Appendix B). Rather than answering questions as a team, individual students had the opportunity to respond to questions posed by either the Master Trainer or senior graduate student who delivered the PCIT lecture by raising their hand. If a student answered the question incorrectly, other students had the opportunity to provide an answer. Review questions were asked in a pre-determined order and students who participated received no prizes for correct answers or participation.

Post-test. After receiving a CDI lecture, all participants were e-mailed the PCIT Quiz post-test. Participants had 2 days to complete the post-test. The link to the demographics questionnaire was sent again to obtain information from participants who did not complete the measure as part of the pretest.

Follow-up Posttest. One month after receiving the lecture, participants were emailed the PCIT Quiz follow-up test. Participants had 2 days to complete the follow-up test and the demographics questionnaire was also included for participants who did not complete the measure at pretest or posttest.

Compensation. Because participants received the lecture in the context of courses with material related to PCIT, all participants were responsible for learning the material for course-related work (e.g., exams and assignments). In addition to helping students gain and retain knowledge of CDI principles, 2 of the 3 faculty (or 3 out of 4 of the classes included in the study) also offered students 1-hour of extra credit for participating in the pre-test, post-test, and follow-up assessment points.

Results

The first step in data analysis was to complete a reliability analysis of the PCIT quiz at each time point. Pretest scores (α=.91) ranged from 5-14 out of a possible 15 points (*M*=9.31, *SD*=1.79). Posttest scores (α=.81) ranged from 5-15 out of a possible 15 points (*M*=12.51; *SD*=1.76). Follow-up scores (α=.98) ranged from 1-14 out of a possible 15 points (*M*=12.2; *SD*=1.93).

Next, we examined the data to determine the amount of missing data. There was a significant amount of missing data that resulted in power that was too low to draw meaningful results from a one-way between-within repeated measure ANOVA. Therefore, an analysis of missing data was conducted. Initially, all participants who completed at least one time-point were included in the analysis. However, Little's MCAR test determined that the data were not missing completely at random, $\chi^2 = 9.5, df = 9, p = .01$. Thus, it was decided that only participants who participated in at least 2 time-points would be included in the analyses. This resulted in 93 participants being dropped from the study. Once participants who completed at least two points in the study were dropped from the analyses, data were determined to be missing

at random according to Little's MCAR, $\chi^2 = 9.5, df = 6, p = .147$. A mixed model analysis was conducted to test for differences between the means of RAU and Jeopardy and time points (e.g., pre-test v. post-test, post-test v. follow-up, pre-test v. follow-up). Missing data were then replaced using expectation maximization.

After assessing the fit of three mixed model designs (Compound Symmetry, Unstructured, and First-order Autoregressive), Compound Symmetry emerged as the best fit for the data. The Compound Symmetry mixed model was determined to be the best fit for the data as a result of the lowest Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC) values (AIC=1421.68, BIC=1462.174), which has been shown to be a reflection of the growth curve model and minimize the chance of a Type II error (Liu, Rovine, & Molenaar, 2012). Though all models showed a significant effect for time, the reported results are the results obtained from the Compound Symmetry analysis. See Table 2 for further information on the models tested.

Examining the effects of Jeopardy on Long-Term retention

The relationship between time (e.g., pretest, post-test 1, follow-up 1, and follow-up 2) and score showed significant variance at all time points, var (pretest) = 2.18, $p<.001$, var (post-test)=1.80, $p<.001$, var (follow-up) = .66, $p<.001$. Furthermore, scores also showed a positive and significant covariance at posttest (cov(posttest, pretest)=.66, $p<.001$) and follow-up (cov(follow-up, pretest)=.40, $p<.001$; cov(follow-up, posttest=.37, $p<.001$). Results of the

unstructured mixed model design indicated a significant fixed effect for overall time regardless of the assigned condition, $F(2, 176)= 316.38$, $p<.001$.

Results of the Compound Symmetry mixed model design (see Table 3) indicated a significant fixed effect for overall time, regardless of the assigned condition, $F(2, 246)= 10.07$, $p=.002$. Specifically, scores increased from pre-test ($M=9.44$, $SE=.17$) to post-test ($M=12.87$, $SE=.17$). At follow-up, participant scores ($M=12.57$, $SE=.17$) remained significantly greater than at pre-test, but were not significantly different than post-test scores.

Examining immediate effects of Jeopardy

There was a significant difference between Jeopardy and RAU across all time points, $F(2,246)=372.99$, $p<.001$. Despite the fixed effect for both condition and time being significant, the interaction of condition and time was not significant. Furthermore, the only time point at which Jeopardy was significant better than RAU was on the pre-test, $t(246)=-13.53$, $p<.001$ (see Figure 1).

Discussion

Study 1 examined the long term and immediate effects of Jeopardy. Despite demonstrating that participants gained and maintained knowledge over the long term, there were no significant differences found between Jeopardy and RAU on participant performance on the PCIT quiz. Thus, no support was found for the hypothesis that Jeopardy would improve long-term retention. Additionally, there were no significant differences found between Jeopardy and RAU in the immediate posttest. However, there were several significant limitations and

confounding variables that significantly reduced our ability to draw meaningful conclusions from Study 1.

Weaknesses specific to Study 1 included variability in follow-up measures and procedures, brief follow-up timeframe, uneven sample sizes, using all degrees of freedom, and significant differences between groups at pretest. Variability in procedures in Study 1 led to several potential confounding variables. First, participants had two days to complete the immediate posttest and, as a result, there was likely some unanticipated variability in participants' quiz scores depending on when the measures were completed. Specifically, participants who took the quiz immediately after receiving the lecture and review activity may have had a performance advantage over participants who took the quiz near the end of the two-day deadline. Effects were likely less pronounced for the follow-up quiz, however, there was still variability in when the participants completed the follow-up quiz (e.g., participants could complete follow-up within 7-9 days after receiving the lecture).

In addition to the variability in timing for the posttest and follow-up measures in Study 1, participants also varied in their approach to the CDI lecture. Specifically, several students were observed to be taking notes during the lecture. Because all students in the participating classes received the CDI lecture as a guest lecture and, thus, were responsible for the information for their courses, students could not be prohibited from taking notes. Despite being asked not to use their notes when completing the posttest and follow-up, it is possible that students used their notes to complete follow up portions of the study because all follow up measures were completed online.

In addition to variability in follow-up measures and procedures, an additional weakness for Study 1 was the relatively short latency period (1 week) between when participants were given the lecture and when they completed follow up measures. Perhaps the time frame was not long enough to detect differences between groups, which could account for why the findings of Study 1 are discrepant from existing findings. Specifically, Khan et al. (2011) found significantly higher scores in participants who completed Jeopardy after a 2-month latency. Though there is presently no literature demonstrating significantly different rates of retention between 1 week and 2 months, it is possible that group differences would have emerged if the current study had included a 2-month follow-up assessment.

Perhaps the most significant limitation of Study 1 was the significant difference that emerged between the Jeopardy and RAU groups at pretest. Random assignment of whole classes, comprised of different students, with different professors, who offered different benefits for participation, and uneven sample sizes all likely contributed to the significant differences between Jeopardy and RAU found at pretest. The uneven sample size for each condition was an artifact of randomly assigning whole classes rather than smaller groups or individual participants to either Jeopardy or RAU. In fact, nearly double the participants completed RAU when compared to students who received Jeopardy.

Aside from having two groups that began the study with significantly different pre-test scores on the PCIT Quiz, which suggests the groups were not comparable, the design of Study 1 also posed a second significant limitation. Specifically, Study 1 used all the degrees of freedom by measuring 3 variables across 3 time points. This restricted the necessary variance in the

unstructured mixed model analysis, and thus limited the ability to draw valid and meaningful conclusions.

The design of Study 1 also was very susceptible to missing data as a function of participants completing all portions of the study outside the classroom. Missing data are a problem for most longitudinal research designs, however, Study 1 had a significant amount of missing data. Specifically, a large number of participants only completed one portion of the study and this limited the ability to use maximum likelihood estimation to account for missing data. When including participants who completed only one portion of the study, data were determined to not be missing at random, thus, a significant number of participants needed to be dropped from the analysis to allow for better estimation of missing data.

Similar to other studies (e.g., Azriel et al., 2005), Study 1 used a RAU condition that tested participants' knowledge. Testing participants knowledge leads to the "testing effect, which states that testing or allow participants to rehearse knowledge leads to improved performance and retention (McDaniel, Anderson, Derbish, & Morrisette, 2007; Nungester & Duchastel, 1982). However, the RAU condition of Study 1 is likely most similar to current review strategies used in PCIT trainings. Therefore, the RAU in Study 1 may be a more accurate comparison between currently used RAU activities in training and Jeopardy. See the overall limitations section later in this document for further information on the role of the testing effect in both Study 1 and Study 2.

Study 2: Using undergraduates to demonstrate the retention of CDI in a simulated training environment

Method

Participants

A total of 108 participants completed Study 2 of the current study. Participants were largely Caucasian (77.1%), female (78%), reported having experience with children (83.5%), and planned on attending grad school (71.6%). Age of participants ranged from 18-37 (*M*=20.13, *SD*=2.09). Participant year in school ranged from 1-5 years (*M*=2.36, *SD*=1.13). Participant self-reported GPA ranged from 0-4.0 (*M*=3.12, *SD*=.62). Psychology was the most common major indicated (28%), followed by Biomedical Science (7%), and Premed (6%). Of the recruited participants, 55 participants were randomly assigned to the RAU condition and 53 were randomly assigned to the Jeopardy condition. Participants assigned to RAU or Jeopardy did not significantly differ from one another in terms of age, gender, race, year in school, GPA, experience with children, or intentions on grad school.

For their participation in the study, participants received 1.5 hours of extra credit for coming into the lab for the initial data collection, and 1.5 hours of extra credit for coming into the lab for each follow-up time point.

Measures

Demographic Questionnaire. A demographics questionnaire including questions regarding participant's age, gender, ethnic background, year in school, major, and GPA was used. Additional questions queried experiences relevant to the current study (e.g., course experience with a focus on children and/or families, working with children directly, graduate school plans, and whether or not participants have previous experience with PCIT).

PCIT Quiz (Lee, Wilsie, & Brestan-Knight, 2011). The same adapted quiz that was used in Study 1 was also used for Study 2 (see Appendix A). Participants completed the PCIT Quiz before receiving a lecture (pre-test) and either RAU or Jeopardy review. Participants also completed the PCIT Quiz immediately following the lecture (post-test), 1 week after receiving the lecture (follow-up 1), and a final time 1 month after receiving the lecture (follow-up 2). The same questions were used at each follow-up point.

Enjoyment Questionnaire. This pilot measure, adapted from Khan et al. (2011), aimed to capture participant enjoyment for the CDI learning activity. The enjoyment questionnaire consisted of 11 questions with responses ranging from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*) that explore student perceptions and enjoyment of the CDI learning activity (see Appendix B).

Procedure

Recruitment. Participants were recruited through SONA to participate in the study. Data were collected from a minimum of 3 and a maximum of 9 participants at a time, in a format similar to that used in PCIT training (e.g., small number of participants seated at a table in a conference room with a SmartBoard and computer in front). Whole time slots were then randomly assigned to either Jeopardy or RAU conditions.

Pre-test. After obtaining informed consent, participants were given time (approximately 10 minutes) to complete the demographics questionnaire and PCIT Quiz before beginning the CDI lecture.

CDI Lecture. Sessions were led by undergraduate research assistants who used a script to ensure all participants received the same instructions. Participants were told they were going to watch a video and were asked to refrain from distractions in order to pay attention to the material. Next, participants viewed a pre-recorded 48-minute lecture on the CDI phase of PCIT given by the same PCIT Master Trainer from Study 1. The recorded lecture was displayed on a single screen and was not paused during the presentation. A recorded CDI lecture was shown to participants to ensure the CDI information was being delivered in a standardized format. Following the lecture, participants reviewed CDI material using either Jeopardy or RAU, as previously described.

Jeopardy. Following the CDI lecture, students assigned to the Jeopardy condition were divided into 3 teams consisting of approximately 3 students. In instances where there were less than 9 participants, 2 participants composed a team. The Jeopardy game included questions from five categories: 1) Do skills, 2) Don't skills, 3) Homework and Mastery, 4) CDI in Action, 5) Miscellaneous. Point values ranged from 10-50 points within each category, with increased point value associated with increased difficulty (see Appendix C). The final Jeopardy question was "Who invented PCIT?" Before being given the final Jeopardy question, participants were asked to decide how many of the points earned during the game they would like to wager. Once a wager was determined, participants were given a few minutes to answer the question. Credit was granted if participants had either the first or last name spelled phonetically correct.

Review as Usual. Participants assigned to the RAU were assigned to a group of 2-3 students. Groups were given a list of 25 facts and asked to take turns reading to the group. Each

person in the group had a copy of the list of facts. The first participant read nine facts to the group, the second participant read eight facts to the group, and the third and final participant read eight facts to his or her group. To ensure all participants spent an equal amount of time reviewing, participants assigned to RAU were asked to repeatedly read aloud the list of 25 facts for a total of 20 minutes in their assigned groups. The list of facts was the same as information reviewed in Jeopardy except the information was presented as sentences outside of the Jeopardy structure.

Post-test. After receiving a CDI lecture and reviewing the material, participants completed the PCIT Quiz and the Enjoyment Questionnaire again.

Follow-up. There were two follow-up time points. Follow-up 1 was completed one week after receiving the lecture. Follow up 2 was completed one month after receiving the lecture. Participants were asked to return to the study to complete the PCIT Quiz on paper in the same room they received the CDI lecture.

Compensation. All participants received 1.5 hours of SONA credit for the initial study, and 1.5 hours of SONA credit for the each follow-up study completed.

Results

Similar to Study 1, the first step in data analysis for Study 2 was to complete a reliability analysis of the PCIT quiz at each time point. Pretest scores (α=.54) ranged from 3-14 out of a possible 15 points (*M*=8.66, *SD*=1.97). Posttest scores (α=.71) ranged from 8-15 out of a possible 15 points (*M*=12.78; *SD*=1.47). Follow-up 1 scores (α=.98) ranged from 7-14 out of a

possible 15 points (*M*=12.43; *SD*=1.8). Follow-up 2 scores (α=.98) ranged from 9-15 out of a possible 15 points (*M*=12.58; *SD*=1.54). Enjoyment scores ranged from 13-44 (*M*=31.61; *SD*=6.53) and demonstrated good internal consistency (α =.88).

Also similar to Study 1, the present study also had a large amount of missing data that occurred as a result of the repeated measure design of the study. Specifically, of the 108 participants recruited for study, only 69 (37%) returned to complete the first follow-up post-test and only 53 (51.4%) returned to complete the second follow-up post-test. To follow up on the large amount of missing data in the study, an analysis of missing data was conducted using expectation maximization estimation. Using Little's MCAR test, data were determined to be missing completely at random ($\chi^2 = 18.54, df = 11, p = .070$). Thus, all data collected were used in the analyses. Missing data were then replaced using expectation maximization.

A mixed model analysis was conducted to test for differences between the means of RAU and Jeopardy and time points (e.g., pre-test v. post-test, post-test v. follow-up 1, pre-test v. follow-up 1, follow-up 1 v. follow-up 2, etc.). Three mixed model designs (First-order autoregressive, compound symmetry, and unstructured) were used to determine the best fitting model for the data (See Table 4).

After assessing the fit of three mixed model designs (Compound Symmetry, Unstructured, and First-order Autoregressive), the unstructured mixed model emerged as the best fit for the data (See Table 5). The unstructured mixed model was determined to be the best fit for the data as a result of the lowest Akaike's Information Criterion (AIC) and Schwarz's Bayesian Criterion (BIC) values (AIC=1421.68, BIC=1462.174), which has been shown to be a

reflection of the growth curve model and minimize the chance of a Type II error (Liu et al., 2012). As a result of being the closest reflection of the model and minimizing the change of a Type II error, the reported results are the results obtained from the unstructured mixed model analysis.

Examining the effects of Jeopardy on long-term retention

The relationship between time (e.g., pretest, post-test 1, follow-up 1, and follow-up 2) and score showed significant variance at all time points, var (pretest) = 3.91, $p<.001$, var (post-test)=2.16, $p<.001$, var (follow-up 1) = 2.95, $p<.001$, var (follow-up 2) = 1.73, $p<.001$. Furthermore, scores also showed a positive and significant covariance at posttest (cov(posttest, pretest)=1.07, $p<.001$), follow-up (cov(follow-up 1, pretest)=1.25, $p<.001$; cov(follow-up 1, posttest=1.77, $p<.001$)), and follow-up 2 (cov(follow-up 2, pretest)=.74, p=.005); cov(follow-up 2, post-test)=1.55, $p<.001$; cov(follow-up 2, follow-up 1), $p<.001$). Results of the unstructured mixed model design indicated a significant fixed effect for overall time regardless of the assigned condition, $F(3, 106)= 157.34$, $p<.001$.

Examining immediate effects of Jeopardy

No support was found for this hypothesis (see Table 4 for further results of the unstructured mixed model analysis). Scores increased from pre-test (M=8.66, SE=.19) to post-test (M=12.79, SE=.14). At follow-up 1, participant scores (M=12.26, SE=.17) remained significantly greater than at pre-test, but were not significantly different than post-test scores.

Furthermore, at follow-up 2, participant scores remained significantly greater than at pretest (M=12.39, SE=.13). There was no significant effect found for assignment to either Jeopardy or RAU, $F(1,106)=.605$, $p=.44$. Furthermore, there was no significant effect found for the interaction between time and condition, $F(3,106)=.424$, $p=.74$.

Effects of Jeopardy on enjoyment

An independent samples t-test was conducted in order to determine if there was a significant difference between enjoyment for Jeopardy and RAU. Participants assigned to the Jeopardy condition (M=33.17, SD=6.35) rated their learning experience as significantly more enjoyable than participants assigned to RAU (M=29.67, SD=6.99), $t(106)=-2.72$, $p=.008$.

Follow-up analyses

Follow-up analyses were conducted to determine if any participant demographic variables correlated with the change scores (difference in scores). See Table 6 for correlations between change scores and demographic variables. See Table 7 and 8 for the minimum values, maximum values, means, and SDs associated with significant correlations.

Discussion

With Study 1 and Study 2 we sought to add to the literature on the utility of active learning in the dissemination of an EST. Moreover, these studies are the first to examine the utility of Jeopardy in the context of a simulated PCIT training workshop. Study 1 and 2 both demonstrate that participants, regardless of review strategy (e.g., Jeopardy or RAU), gain and

maintain an increased level of knowledge for up to 1 month after receiving information about CDI through either a live (Study 1) or recorded lecture (Study 2). As such, the current studies add support to the literature that knowledge increases as a result of training and that knowledge gains are maintained over time (Herschell et al., 2009).

Maintaining a high level of PCIT knowledge is important because PCIT is a very "dense" therapy in that there are many codes and guidelines for practice that must be memorized or learned well. Live supervision by a PCIT supervisor for trainee sessions is not always possible (e.g., technical problems, resource limitations, etc.), thus, trainees must possess an adequate level of knowledge so as to navigate the treatment protocol, handle in-session challenges, and be able to report difficulties in treatment implementation during bi-weekly consultation calls. In addition to finding that all participants gained and maintained a higher level of knowledge following CDI lectures, Study 2 also found that participants who reviewed information using Jeopardy enjoyed the learning activity more than participants who participated in RAU. This discussion will include findings and implications Study 2. Furthermore this section will include a discussion of both studies as a whole, the limitations of both studies, and future research and clinical directions as a result of this study.

Study 2 was developed as a result of the significant weaknesses of Study 1, which limited our ability to draw meaningful conclusions. Study 2 improved upon Study 1 in several ways. First, Study 2 improves upon Study 1 by decreasing the variability in follow-up measures. Ensuring all participants completed follow-up measures at exactly the same latency periods reduced variability in measures. As a result of reducing the variability in latency periods, the

confounding variable of the decay of knowledge, which may have occurred in the two-day timeframes, was reduced.

Furthermore, Study 2 also extended the latency period to one month. Our rationale for extending the latency period to one month was to better approximate the conditions that PCIT trainees experience (latency between a training workshop and seeing a first PCIT client) and to provide a follow-up assessment that was more comparable to work by Khan et al. (2011), which found a significant difference between Jeopardy and RAU. It is important to note, that despite significant improvements made to Study 2 both studies offered the advantage of more controlled latency periods than existing studies which have either not specified a latency period (e.g., Azriel et al., 2005; Benek-Rivera, 2004; Grauerholz, 1991; Keck, 2000) or collected measures only immediately after playing Jeopardy (Khan et al., 2011; O'Leary et al., 2005; Shiroma et al., 2011). Adding a one-month follow-up (follow-up 2) in addition to the pretest, immediate posttest, and one-week follow-up (follow-up 1) also added another degree of freedom, thus making conclusions more valid as a result of allowing for more variance in the model. Additionally, Study 1 and Study 2 also offer the advantage of collecting quantitative data rather than relying solely upon qualitative data as was done in previous study (e.g., Bayer-Hummel, 2010; Cook, 1997; Revere, 2004; Walker, 2008). The quantitative data collected in this study is a better representation of participants' actual knowledge, rather than qualitative data, which is subject to the illusion of gained knowledge and susceptible to social desirability and demand characteristics (Corrigan, Steiner, McCracken, Blaser, & Barr, 2001).

Study 2 was also designed to include several improvements to the design of Study 1 including preventing participants from taking notes, randomly assigning smaller groups of participants to either Jeopardy or RAU to ensure better random assignment and comparable sample sizes, ensuring that all participants completed at least two parts of the study (pre-test and post-test), ensuring that the RAU condition did not include a test of participant knowledge, using a small number of participants per timeslot to better approximate PCIT training workshops, and offering the same benefits to all students who participated. Finally, in addition to improving upon Study 1's weaknesses, Study 2 also added a measure of enjoyment that was adapted for use in this study.

Despite significant improvements to the study design, no support was found for Jeopardy offering an advantage over RAU conditions in the immediate posttest, follow-up 1, or follow-up 2. Though one unexpected finding was discovered in Study 2 in that mean PCIT Quiz scores increased from the 1-week follow up to the 1-month follow up. There was a significant relationship between this change score and race, experience with children, and babysitting experience. Specifically, there was a significant positive correlation relationship between Race and change scores, a negative correlation between experience with children and X, and a negative correlation between babysitting experience and X. Participants who identified themselves as African American or biracial had higher mean scores on the PCIT quiz at all time points than participants who identified themselves as Caucasian. It is likely that minority participant's means were higher due to a smaller sample of minority students compared to Caucasian students. It is also possible that participants who self identified as racial/ethnic

minorities were also more interested in the material as it was novel compared to traditional cultural beliefs which have been found to impact several aspects of parent training (Forehand & Kotchick, 1996). In general, African American parents tend to demand high levels of respect and obedience from children (Dixon, Graber, & Brooks-Gunn, 2008).

Additionally, there was a significant relationship between participants who indicated they had previous experience and scores on the PCIT quiz than participants who did not have prior experience with children. Perhaps people who had experience with children or who had babysitting experience were more interested in the information being presented in the study as a result of past, present, and perhaps future interactions with children. Existing research suggests that undergraduate students who are familiar with children are more likely to endorse intentions on using effective discipline techniques in the future (Lee, 2006).

Since Jeopardy does not offer an advantage in information retention over RAU, one must begin to question whether Jeopardy is best suited for a review technique. Perhaps Jeopardy may be more beneficial as a pedagogical technique aimed at teaching new material. In their study, Khan et al. (2011) demonstrated that medical students who played Jeopardy, as opposed to students who received a lecture, had significantly higher scores following a 2-month latency period. One reason for the discrepant findings between the current study and work by Khan et al. (2011) is a difference in utility. Specifically, Khan et al. (2011) taught new material using Jeopardy, rather than using Jeopardy as a review strategy. The similarity of participants in the Khan et al. (2011) study to seasoned trainees, suggests that, indeed, it may be beneficial to use Jeopardy to teach trainees new material rather than review material. Alternatively, Jeopardy may

also be helpful in allowing participants to review information covered in any portion of PCIT training completed online, particularly in an effort to help establish rapport between the trainees and trainer.

In addition to establishing rapport between the trainer and trainee, it may be important to allow trainees to review information together. Revere (2004) used team-based Jeopardy as a standalone exam and compared these score to scores of students who completed individual exams. Students who completed the Jeopardy exam in Revere's study had a clear advantage of being in teams (and benefitting from a consensus approach to the items), compared to students who completed the exam individually. Perhaps participants in the current study had a similar advantage to participants in the Revere (2004) study. All participants, including those assigned to the RAU condition, reviewed materials in small groups with others. In fact, the only difference between RAU and Jeopardy was whether teams worked together inside or outside a game format. Allowing all participants to work with others in reviewing material may account for the lack of differences found between Jeopardy and RAU conditions (e.g., all participants had the advantage of studying with others). In fact, previous literature as found that not only does team based learning (e.g., Jeopardy) demonstrate higher exam scores (Katzenbach & Smith, 1993) the simple act of studying with others has also demonstrated an advantage over studying individually (van Wyk, 2011). Thus, it may be important to encourage participants to review material together or to design activities for trainees to review information in small groups at regular intervals or at the conclusion of a 40-hour PCIT workshop.

Support was found for the hypothesis that participants who reviewed information using Jeopardy would rate the learning activity as significantly more enjoyable than those who completed RAU. This finding is consistent with the vast majority of literature (e.g., Shiroma et al., 2011; Telner & Bujas-Bobanovic, 2010) in which participants from a variety of backgrounds, learning a vast array of material, tend to enjoy active learning techniques such as Jeopardy more than standard learning or review strategies. Moreover, despite the lack of significant differences between Jeopardy and RAU, enjoyment has also demonstrated an important role in learning (Garris et al., 2002).

Enjoyment in learning is important because it contributes to increased activation of cognitive resources (Fend, 1997), greater commitment to the learning process, and higher motivation, while simultaneously decreasing emotions that impede the learning process (e.g., boredom, hopelessness) (Pekrun et al., 2002; Pekrun, 2006). Furthermore, enjoyment in the learning process, specifically in the context of the dissemination of ESTs, is an important first step in establishing positive rapport between a trainer and trainee (Catt et al., 2007). This is essential in the supervision process and has been shown to have benefits including increased treatment adherence and improved patient outcomes (Patton & Kivlighan, 1997).

Enjoyment was also measured in a more accurate way in Study 2 when compared to other studies. Specifically, an 11-item measure of enjoyment that demonstrated good internal consistency was developed and used to measure enjoyment. Previous studies which examined enjoyment in Jeopardy have used either anecdotal comments by participants (e.g., Benek-Rivera, 2004; Keck, 2000; Kelly, 1995; Selby et al., 2007), single questions regarding enjoyment (e.g.,

Shiroma et al., 2011), or enjoyment measures containing only a few items (e.g., O'Leary et al., 2005). In fact, the longest enjoyment measure available in the literature is 10 items long and the authors did not provide any psychometric data for the measure (Telner & Bujas-Bobanovic, 2010).

Limitations

Despite considerable strengths in Study 2, as with all studies, there were several notable weaknesses. First, fatigue may have served as a confounding variable in terms of immediate differences between Jeopardy and RAU. Normative selective sustained attention in adults ranges from 10 (Hartley & Davies, 1978; Medina, 2009) to 40 minutes (Cornish & Dukette, 2009), depending on engagement level of the task (Oken, Salinsky, & Elsas, 2006). By contrast, participants in Study 2 were asked to sustain attention through completing initial measures (e.g., demographics questionnaire, pretest), a 50-minute lecture, a 20-minute review activity, and immediate posttest measures (e.g., enjoyment, post test 1). In total participants in Study 2 spent 1.5 hours in the lab with no break, which may have lead to fatigue. Though all participants likely experienced some level of fatigue during the study, fatigue may have lessened the effect of Jeopardy. Specifically, by the time participants reached the review activity they may have been fatigued or bored by the study, which may have contributed to a lack of motivation to actively engage in the learning activity. Contrarily, repeatedly rehearsing information may have helped participants memorize the facts rather than learn and apply the information. However, given that the PCIT Quiz was straightforward and did not require participants to demonstrate mastery of skills, pure memorization may have negated the difference between Jeopardy and RAU on the PCIT Quiz.

A related possibility is that, given the extensive teaching and training experience of the Master Trainer and upper-level graduate student who gave the live lecture, perhaps, the

engagement level of lecture provided in Study 1 minimized the effects of Jeopardy. Specific ways the live lecture was engaging was through the use of video clips, using real-life examples, and the lecturers pausing to allow participants the opportunity to fill in the blank. Despite Study 2 being a recorded lecture, Study 2 was also engaging and novel in the presentation of the material (e.g., the recording was edited to switch frames between the Master trainer, power point, video clips, and split-screen). Perhaps spending time and energy focusing on presenting information in a novel manner would be more advantageous than preparing and implementing Jeopardy.

An additional weakness for Study 2 included the lack of a prize for winning. However, this was necessary since there was no way to ensure all participants received an equal opportunity for a prize. Specifically, there was no way to offer prizes to participants assigned to RAU in Study 2 since they were repeatedly reading a list of facts.

A shared weakness of both Study 1 and Study 2 was the testing effect. Though Study 2 attempted to minimize the testing effect by having participants assigned to RAU read through a list of facts, versus testing participant's knowledge in a question and answer session. However, the testing effect may have still falsely elevated all participants' scores given that each participant took the same quiz 4 times over the duration of the study (McDaniel et al., 2007; Nungester & Duchastel, 1982). Though participants assigned to Jeopardy in Study 2 had one additional opportunity to be tested on the material, this one additional rehearsal of information was perhaps not impactful enough to demonstrate a significant benefit for participants in the Jeopardy condition.

Lack of access to mental healthcare workers posed an additional limitation for both Study 1 and Study 2. Jeopardy has demonstrated effectiveness with a wide audience including undergraduates, healthcare professionals, and seasoned mental health care professionals with graduate education and a significant investment in training (e.g., time, financial, occupational), however, trainees and undergraduates may reap different benefits from Jeopardy as a result of different approaches to Jeopardy - and training as a whole. Using an undergraduate population may be another reason that the findings of the current studies are discrepant from work by Khan et al. (2011). Specifically, Khan et al. (2011) used advanced medical students whereas the present studies used undergraduates. As a whole, undergraduate students have a variety of majors and less educational experience when compared to advanced medical students. Moreover, undergraduates in prerequisite courses have demonstrated significantly poorer grades when compared to undergraduates taking classes directly related to their major (Hulleman, Godes, Hendricks, & Harackiewicz, 2010). Thus, if participants in either Study 1 or Study 2 were not interested in becoming a mental health care worker, they may have performed worse than someone who has already committed to a career in mental health (e.g., a mental health care worker interested in PCIT training). Specifically, both advanced medical students and seasoned therapists alike may be more motivated to actively try to learn material as a result of needing to obtain and use the information in a highly accurate way. As a result of increased motivation, the participants from Khan et al. were likely more engaged to pay closer attention to Jeopardy.

Future Directions

Research Implications

The use of active learning techniques, especially in regards to training health care professionals, represents an area of research in clear need of more research. In a systematic review of the use of active learning strategies in the training of health care professionals, only two studies met criteria for inclusion (Akl & Kairouz, 2013). Of the two studies included in the review, neither collected measurements of patient outcomes, which represents a critical dearth in the dissemination literature. Moreover, the two published studies included small sample sizes that resulted in insufficient power to detect differences between treatment and control groups (Akl & Kairouz, 2013).

In addition to minimizing missing data and ensuring adequate sample sizes. Future examination of active learning strategies (e.g., Jeopardy) in the context of treatment dissemination should use mental health care professionals rather than an undergraduate population. Despite similarities in outcomes between undergraduates and professionals, motivation between these populations is likely very different, and these differences in motivation likely effect how they approach Jeopardy in meaningful ways.

Given the lack of research focusing on specific dissemination techniques and how those techniques translate to patient outcomes, additional future directions for the evaluation of PCIT training techniques should also include measures of patient outcomes. The lack of tracking actual patient outcomes as a function of specific dissemination strategies is a critical weakness in the dissemination literature in general, not just for PCIT. Aside from looking at specific techniques

within training, looking at what can be done after training to improve client outcomes is also an important area for future research to consider. A recent study by Funderburk et al. (2014), suggests that both the type and timing of posttraining consultation has a significant impact on client outcomes. Specifically, trainees who received live video consultation, especially early in treatment, demonstrated improved client outcomes. Future research should continue to explore both specific mechanisms within training (such as Jeopardy) and outside of training (such a consultation modality) that lead to improved patient outcomes at follow up.

In a review of issues and research of treatment integrity and therapeutic change, Perepletchikova, & Kazdin (2007) suggests that treatment integrity is increased primarily through direct techniques (e.g., role-play, modeling, rehearsal, etc.), rather than indirect techniques (e.g., lectures, Jeopardy, etc.). Furthermore, Perepletchikova & Kazdin (2007) suggest that continued supervision, review of session videos, and problem solving difficult situations can facilitate therapist adherence and competence in the implementations of ESTs more than providing greater amounts of initial information about the treatment. Thus, perhaps training time during workshops would be better focused on specific strategies shown to improve integrity and therapeutic change.

Future studies should also contribute to the literature by examining the specific training techniques that increase treatment fidelity. Though there is no clearly established relationship between information retention and demonstrating mastery over PCIT skills, there is also a paucity in research examining specific mechanisms that foster or improve the treatment fidelity of mental health professionals. (Herschell et al., 2009). Though, as previously mentioned, there

is emerging research that suggests what happens after training may also impact patient outcomes (Funderburk et al., 2014). Perepletchikova & Kazdin (2007) did not recommend using lectures, Jeopardy, or RAU to increase treatment fidelity directly, however, these techniques are likely necessary for therapists to implement treatment – especially in learning a highly manualized treatment, such as PCIT. However, these techniques do not appear to be sufficient to meet either skill mastery or treatment fidelity.

Further future directions may include examining whether there is a benefit of using limited training time to review information at all or if trainees are motivated enough to review and study the information on their own. Other future directions may include investigating whether Jeopardy decreases the likelihood of no improvement from pretest to posttest and extending the latency period for the final follow up to 3 months to address whether Jeopardy review offers benefits over a longer latency period.

Clinical Implications

Despite the lack of significant differences in information retention between Jeopardy and RAU following a lecture and review activity, there are important conclusions that can be drawn from the current study. First, participants who participated in Jeopardy rated the activity as significantly more enjoyable than participants assigned to RAU. Though enjoyment fosters several beneficial preconditions for increased learning outcomes, one must carefully consider the costs and benefits of preparing and implementing Jeopardy. Clearly engaging review activities are more enjoyable than mundanely reviewing information. However, given that all participants

gained and maintained knowledge regardless of review strategy, trainers must carefully weight the benefits versus cost (e.g., time financial, etc.) of implementing Jeopardy. Specifically, trainers are encouraged be mindful of the limited time trainees are in training and whether or not the time spent playing Jeopardy is indeed worth the resources (e.g., time, financial, etc.) required to implement Jeopardy, or if training time is better spent on other activities.

Trainees or their employers typically pay $3000 or $75 per hour (not including airfare, room, and board) to receive 40 hours of training from a PCIT master trainer. Given that there are typically 6 trainees in each training session, there is approximately $450 being spent per hour of training. Is playing Jeopardy for a half an hour, which offers only the advantage of increased enjoyment in reviewing material, worth $225 healthcare training dollars? Moreover, would the same $225 and limited face-to-face time spent on Jeopardy, be better spent allowing participants to review material individually, in casual conversation, or discussing implementation issues? Anecdotally, casual conversations during past training workshops have led to both subjective enjoyment and research collaborations. Moreover, when using games in the context of training, one must ensure that the focus of the game remains on the content of PCIT, rather than the game itself, particularly as games that distract from the content of training (e.g., Charades) can lead to poorer performance than RAU strategies (Selby et al., 2007). Perhaps, Jeopardy's optimal utility may be helpful in a booster session outside of training, or made available as an enjoyable review activity in the event that training finishes early.

Finally, all participants gained and maintained information for up to 1 month as a result of both a live and recorded lecture, which suggests that both live and recorded lectures may be

effective means of teaching treatment protocol knowledge, regardless of review strategies used. Perhaps rather than focusing on games such as Jeopardy, trainers would benefit from working to increase trainee engagement level by increasing the novelty with which they present training information, both during live and online presentations (Bellg et al., 2004; Oken, Salinsky, & Elsas, 2006) .

As the field of psychology progresses to an environment dominated by managed-care, insurance companies will likely want to ensure that covered providers have adequate competence through requiring certification for ESTs, which will require clinicians to retain information about specific treatment protocols (Baker, McFall, & Shoham, 2008). Thus, research into all aspects of dissemination, including the retention of information, regarding ESTs will continue to grow in importance.

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Table 1

Participant composition by class and time. RAU = Review As Usual.

Class	Condition	Assessment	n
Abnormal Section 1 (N=104)	RAU	Pretest	35
		Posttest	68
		Follow-up	27
Abnormal Section 2 (N=98)	Jeopardy	Pretest	28
		Posttest	50
		Follow-up	18
Developmental Psychology (N=158)	RAU	Pretest	32
		Posttest	61
		Follow-up	29
Psychology of Learning (N=55)	Jeopardy	Pretest	21
		Posttest	14
		Follow-up	10

Table 2

Measures of fit for mixed-model designs in Study 1.

Model	No. Parameters	-2 Log Likelihood	AIC	BIC
Compound Symmetry	15	1200.91	1204.91	1212.73
Unstructured	15	1148.13	1160.13	1183.59
First-order AR	15	1204.34	1208.34	1216.162

Table 3

Compound Symmetry mixed model results in Study 1.

Source	Numerator df	Denominator df	F	Sig
Condition	1	123	10.07	.002*
Time	2	246	372.99	<.001*
Condition * Time	2	246	.174	.841

*Significant at the $p<.01$ level

Table 4

Measures of fit for mixed-model designs in Study 2.

Model	No. Parameters	-2 Log Likelihood	AIC	BIC
Compound Symmetry	10	1528.15	1532.15	1540.25
Unstructured	18	1401.68	1421.68	1462.17
First-order AR	10	1522.81	1526.81	1534.91

Table 5

Unstructured model results for Study 2

Source	Numerator df	Denominator df	F	Sig
Intercept	1	106	8471.57	<.001
Time	3	106	157.336	<.001
Condition	1	106	.605	.438
Time * Condition	3	106	.424	.736

Table 6

Correlations between change scores and demographic variables

	Race	Any Experience with Children	Babysitting Experience	Day care Experience	Course Experience	Grad School
Pretest-Posttest	-.19*	.13	.07	.06	-.21*	.05
Pretest-Follow up 1	-.01	.06	.08	.29*	-.12	.22
Pretest – Follow up 2	-.22	-.11	.09	.02	-.34*	-.08
Posttest-Follow up 1	.25*	-.01	.08	.17	.02	.25*
Posttest-Follow up 2	.33*	-.18	-.14	.09	.06	.06
Follow up 1 – Follow up 2	.41**	-.38*	-.40*	-.14	-.15	-.10

* Indicates a $p<.05$
** Indicates a $p<.01$

Table 7

Mean PCIT Quiz scores for each race represented in Study 2.

		N	Min	Max	M	SD
Caucausian	**Pretest**	84	4	14	8.65	1.94
	Posttest	84	9	15	13	1.18
	1 week	58	7	15	12.36	1.78
	1 month	35	10	15	12.71	1.35
African American	**Pretest**	10	6	13	9.3	2.26
	Posttest	10	9	15	12.8	2.04
	1 week	6	12	15	13.33	1.51
	1 month	8	10	15	13	1.51
Hispanic	**Pretest**	5	7	10	8.6	1.14
	Posttest	5	9	14	11.8	2.17
	1 week	2	13	14	13.5	.70
	1 month	3	12	14	13	1
Asian/Pacific Islander	**Pretest**	8	3	10	7.75	2.18
	Posttest	8	8	13	10.87	1.55
	1 week	3	8	13	11.33	2.88
	1 month	6	9	14	10.83	1.94
Biracial	**Pretest**	1	11	11	11.00	
	Posttest	1	15	15	15.00	
	1 week	0				
	1 month	1	14	14	14.0	

Table 8

Mean PCIT Quiz scores for participants with and without experience with children.

Experience With Children		N	Min	Max	M	SD
No	**Pretest**	17	5	14	8.82	2.16
	Immediate	17	9	15	12.35	1.50
	1 week	11	7	15	11.73	2.41
	1 month	12	9	15	12.5	1.88
Yes	**Pretest**	91	3	13	8.54	1.94
	Immediate	91	8	15	12.87	1.46
	1 week	58	8	15	12.57	1.66
	1 month	41	9	15	12.61	1.45

Figure 1

Study 1 PCIT Quiz scores across time points. Time 1 = Pretest, Time 2 = Immediate posttest (completed within 2 days of lecture), Time 3 = 1-month posttest (completed between 28-30 days).

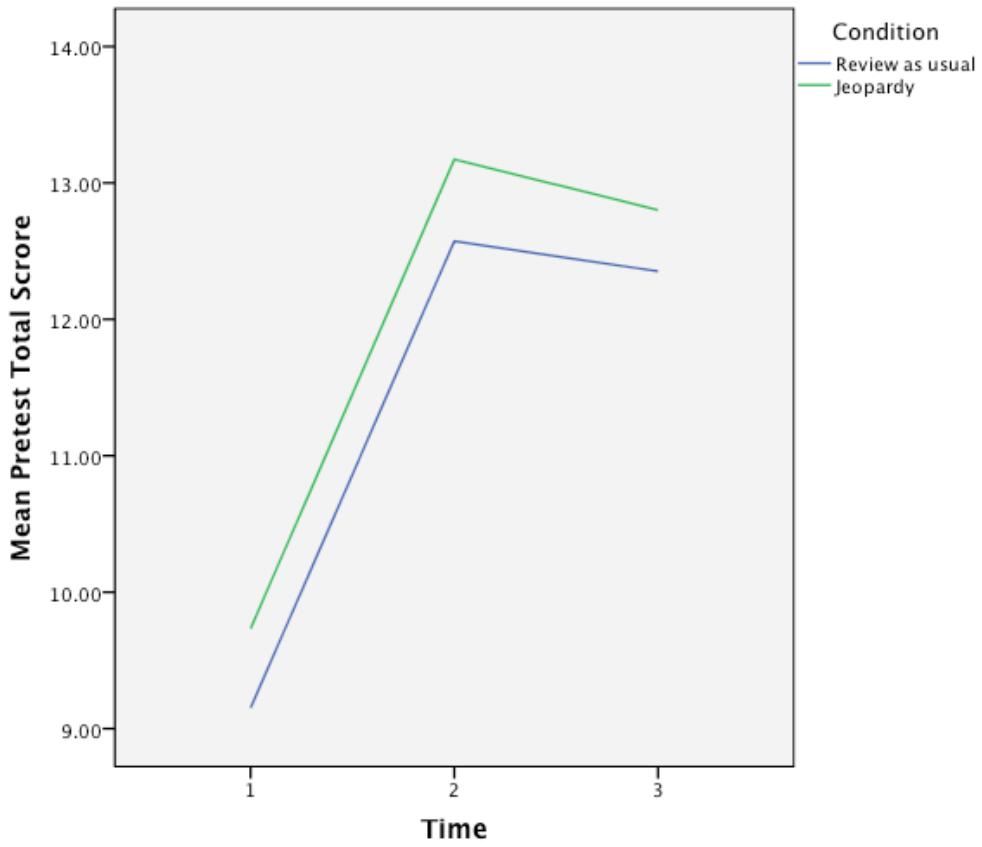
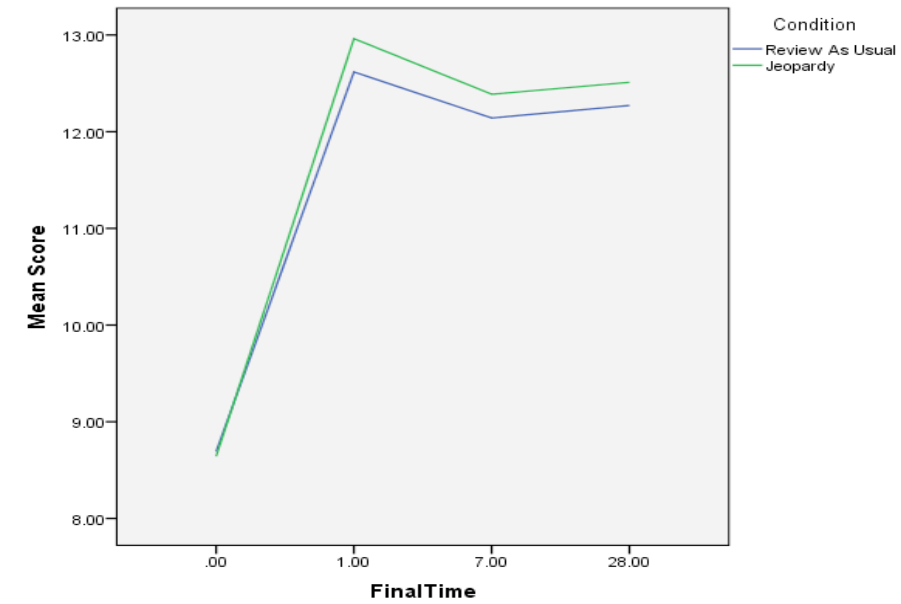


Figure 2

Study 2 PCIT Quiz scores across time.



Appendix A

PCIT Quiz

1. PCIT is an acronym that stands for:
    a. Parents and Teachers in Training
    b. Proper Child Interaction Therapy
    c. Parent-Child Interaction Therapy
    d. Parent-Child Interest Test

2. You and a child are playing with toy animals and the child says, "I've got a moo cow." An example of a reflection you could say is:
    a. You are playing so nicely with your moo cow
    b. What comes from cows
    c. I have a goat
    d. You do have a brown and white cow

3. During CDI, which of the following should caregivers avoid doing when playing with their children:
    a. Doing what the child is doing
    b. Asking the child about what they are doing
    c. Describing what the child is doing

d. Showing enjoyment

4. When playing with a child during a CDI session it is important for caregivers to:
    a. Lead the play
    b. Make sure the focus is on what the caregiver is doing
    c. Show that they are interested by asking questions
    d. Let the child know what they are doing is interesting

5. What does PRIDE stand for?
    a. Peace, Respect, Intellect, Determination, Experience
    b. Positive, Ritual, Independent, Discipline, Education
    c. Praise, Reflect, Imitate, Describe, Enjoy
    d. Parents, Redirect, Interaction, Determination, Enjoyment

6. Which of the following **is** an appropriate statement to make during a CDI play session with a child?
    a. "You are using green blocks to build a house."
    b. "Let's play with the animals, ok?"
    c. "The sky is not purple."
    d. "Come play with me."

7. Which is not a benefit of CDI play sessions?
    a. Improves children's self-esteem
    b. Enhances children's creativity
    c. Enhances the relationship between the parent and child
    d. Has a calming effect on the child
8. What does CDI stand for?
    a. Calm Down Instantly
    b. Child's Dependent Initiation
    c. Child Directed Interaction
    d. Concrete Dyad Interaction

9. CDI play sessions should be done:
    a. As a special treat for good behavior
    b. Every day regardless of how the child has behaved the rest of the day
    c. Right before the child gets ready for bed
    d. Once a week regardless of how the child has behaved

10. Which of the following would **not** be an appropriate set of toys to use during a CDI play session?
    a. Mr. Potato Head
    b. Video games

c. Legos

d. Farm animals

11. A labeled praise is preferred over an unlabeled praise because:

a. It tells the child exactly what he or she did that was good

b. It sounds nicer

c. It is shorter

d. It is more enthusiastic

12. How often should parents practice their PRIDE skills?

a. 5 minutes a day

b. 30 minutes a day

c. 5 times a month

d. 3 times a week

13. How many phases does PCIT have?

a. 3

b. 5

c. 1

d. 2

14. Which of the following is an example of the type of praise encouraged in PCIT?

a. “Excellent!”

b. “You are awesome!”

c. “Great job putting your toys away!”

d. “You are so sweet!”

15. If a child is playing nicely and appropriately, it is important for parents to

a. Leave the child alone so that he or she will continue

b. Praise the child for playing nicely

c. Give the child a command to do something the parent wants

d. Ask the child why he or she can’t play like this all the time

Appendix B

Demographic Questionnaire

1. Age: _____
2. Gender
    a. Female
    b. Male
3. Your ethnic and racial background
    a. Caucasian
    b. African American
    c. Hispanic
    d. Asian/Pacific Islander
    e. Native American
    f. Biracial
    g. Mulitiracial
    h. Other (please explain): _____
4. Year in school:_____
5. Major: _____
6. Current GPA: _____
7. What college courses have you taken related to children and/or child development (i.e., Lifespan Development, Marriage and Family Therapy, Human Development and Family Services):
    a. _____
    b. _____
    c. _____
    d. _____
    e. _____
8. Do you have prior experience with PCIT?
    a. Yes
    b. No
9. Do you have prior experience working with children?
    a. Yes
    b. No
10. If you responded yes to #8, please list your experiences and how long you've had these experiences:

    _____
    _____
    _____
    _____
    _____

_____
_____

11. If you answered YES to above, please indicate the experiences you have had working with children (please circle all responses that apply):
    a. Babysitting
    b. Working in a daycare/preschool setting
    c. Engaging in other volunteer work that involved working with children
    d. Engaging in a college course for course credit (i.e., Experiential Learning; Human Services Practicum)
    e. Other (please specify): _____
12. Do you intend on attending graduate school?
    a. Yes
    b. No
13. If you answered yes to number 11, for what degree and in what area do you intend to pursue graduate education?

_____
_____
_____

Appendix B

Enjoyment Questionnaire

Please rate your experience of watching today's video recorded lecture and group review of the material from the lecture on a scale of 1 (Strongly Disagree), 2 (Disagree), 3 (Agree), 4 (Strongly agree).

1) This educational format stimulates good interaction between the research assistant and students

   1 2 3 4

2) This educational format stimulates good interaction between students

   1 2 3 4

3) This educational format stimulates your interest and keeps you engaged in subject

   1 2 3 4

4) You paid **less** attention to this educational format than you would in a typical classroom

   1 2 3 4

5) This educational format is enjoyable

   1 2 3 4

6) This educational format is **not** an appropriate method of teaching.

   1 2 3 4

7) The PCIT material presented in this educational format was interesting to you

   1 2 3 4

8) This educational format was boring

1 2 3 4

9) This educational format will make it harder for you to remember the material in the future.

1 2 3 4

10) In an ideal learning setting, you would **not** choose to learn material in this way.

1 2 3 4

11) You would be interested in participating in a review session like this in the future

1 2 3 4

Appendix C

Jeopardy Questions

- **Do skill Questions**

  10) The basic rule for CDI is that the _____ leads the play

  20) This is the acronym used to help parents remember the do skills for CDI

  30) This type of praise is the preferred type of praise in CDI

  40) Parallel play and cooperative play are ways of demonstrating this do skill

  50) To meet mastery criteria of the do skills parents must demonstrate 10 of each of these 3 skills

- **Don't skills**

  10) These 3 rules are things that parents are told not to do in CDI

  20) These are the two types of commands that are discouraged in CDI

  30) This don't skill can suggest to the child that the parent is not listening to the child.

  40) No, Stop, Don't, or Quit are examples of this don't skill.

  50) These two don't skills risk taking the lead away from the child

- **Homework and Mastery**

  10) Parents are instructed to practice with their children at home for this many minutes each day

  20) This is a frequently used nickname for CDI practice at home

  30) The only time parents are instructed to stop the play is when this occurs

40) Instead of saying no, don't, stop, quit, parents are encouraged to do this to a child's annoying behavior

50) These are the two main reasons we ask parents to limit special time to 5 minutes at home

❖ **CDI in Action**

10) Provide an example of a reflective statement a parent could give: Child: "I am making a big blue house"

20) The following scenario would be coded as this: Child: [drawing a person]. Parent: "You are drawing a person".

30) When a parent says, "I like playing with you." They are demonstrating this specific skill

40) The following statement would be coded as this: Mom: "Could you hand me a crayon?"

50) Turn this unlabeled praise into a labeled praise: [Child building a block tower]. Parent: "Good job!"

❖ **Miscellaneous**

10) This session happens before the child comes in for PCIT and is called CDI _____ session

20) This CDI do skill helps improve and increase child speech

30) This specific CDI do skill increases a child's self-esteem

40) This CDI do skill helps focus child's attention on a task

50) One way that parent's can shape their child's behavior during CDI is to use this technique that reinforces positive behavior and ignores negative behavior