



July 2018

## The Impact of Online Video Cases on Clinical Reasoning in Occupational Therapy Education: A Quantitative Analysis

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### Recommended Citation

Murphy, L. F., & Stav, W. B. (2018). The Impact of Online Video Cases on Clinical Reasoning in Occupational Therapy Education: A Quantitative Analysis. *The Open Journal of Occupational Therapy*, 6(3). <https://doi.org/10.15453/2168-6408.1494>

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# The Impact of Online Video Cases on Clinical Reasoning in Occupational Therapy Education: A Quantitative Analysis

## Abstract

Clinical reasoning, the cognitive process of a skilled occupational therapist, is a complex and necessary component of evaluating clients and implementing interventions that facilitate each client's achievement of relevant and meaningful participation in daily occupations. Clinical reasoning encompasses a set of skills that must be integrated into college curricula for the preparation of occupational therapists, but it is not easily taught in a classroom setting. This quasi-experimental, quantitative research explored how specific instructional techniques, constructed on the tenets of case-based reasoning, influenced the development of clinical reasoning in occupational therapy students. The experimental group with video cases improved significantly in overall reasoning. The video cases challenged the learners to analyze their observations, explicitly identify clinical reasoning skills, and make decisions regarding occupational therapy interventions and services. This may influence how video technology is used and integrated into didactic educational practices.

## Comments

This is the first of two articles that describe one research study.

The authors report no conflicts of interest to disclose.

## Keywords

case-based learning, clinical reasoning, instructional technology

## Cover Page Footnote

The research support of Dr. Liyan Song, Dr. Scot McNary, and Dr. Bill Sadera of the Department of Educational Technology and Literacy at Towson University is acknowledged, as this research was completed in partial fulfillment of the requirements for the degree of Doctor of Education for the first author.

## Credentials Display and Country

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DOI: 10.15453/2168-6408.1494

In a landmark study of clinical reasoning in occupational therapy, Rogers (1983) describes clinical reasoning as a blend of artistry, science, and ethics that is difficult for a novice to learn. Competent occupational therapy service planning and delivery relies on a combination of inductive reasoning, deductive reasoning, ethical decision-making, knowledge, experience, and interaction skills (Rogers, 1983). Most clinicians require experience, conscious reflection, critical analysis, and self-criticism to develop the complex skills of clinical reasoning (Rogers, 1983).

As clinical reasoning is critical to competent occupational therapy practice, it must be integrated into education that prepares individuals to enter the profession. There is consensus across the profession that occupational therapists cannot perform clinical reasoning without explicit consideration of each specific client and his or her abilities, limitations, contexts, medical condition, culture, and values (Boyt Schell, 2009; Boyt Schell & Schell, 2008; Fleming, 1991; Mattingly, 1991; Mattingly & Fleming, 1994; Rogers, 1983). Therefore, a client's story or various forms of case studies have been traditionally used in occupational therapy education to facilitate foundational clinical reasoning. This allows for consideration of the individual client in occupational therapy evaluation and interventions. The format of these cases have historically included written or text-based cases, videotaped patients, simulated or standardized patients, and stories elicited from former occupational therapy clients (Bazyk & Jeziorowski, 1989; Liu, Schneider & Miyazaki, 1997; Lysaght & Bent, 2005; Neistadt & Smith, 1997; VanLeit, 1995). All of these methods have theoretical foundations in case-based reasoning, a model that may be useful for understanding the cognitive process that occupational therapists use in performing clinical reasoning.

Research on the use of case-based reasoning in occupational therapy education and in related health fields has been limited to student satisfaction with case-based learning methods (Curran, Sharpe, Forristall, & Flynn, 2008; Kim, Pederson, & Baldwin, 2012; Lysaght & Bent, 2005; Thistlethwaite et al., 2012; Williams, 2009), connections of instructional methods to other learning outcomes (Bagdasarov et al., 2012; Cook & Triola, 2009; Kaddoura, 2011; Mounsey & Reid, 2012), and how clinical reasoning or critical thinking in occupational therapy students may develop over time (Lederer, 2007; Mattingly, 1991; Rogers, 1983; Vogel, Geelhoed, Grice, & Murphy, 2009). In addition, limited research exists in occupational therapy education that attempts to measure clinical reasoning using standardized measures (Lederer, 2007; Vogel et al., 2009) or to measure clinical reasoning related to various experiential instructional techniques (Coker, 2010; Royeen, Mu, Barrett, & Luebben, 2000; Scaffa & Smith, 2004). There remains a lack of understanding about how instructional methods may contribute to the acquisition of foundational clinical reasoning skills in higher education, which can be measured in an explicit manner (Boyt Schell & Schell, 2008; Falk-Kessler & Ciaravino, 2006; Lederer, 2007; Mattingly, 1991; Rogers, 1983; Unsworth & Baker, 2016; Vogel et al., 2009).

### **Literature Review**

Case-based reasoning, as described by Kolodner and Guzdial (2000), provides a theoretical framework in which an expert uses his or her experiences or cases to assist others to learn and reason and to facilitate the application of that knowledge to similar situations. This method uses the interpretation of expert cases to assist students in understanding new situations. A learner can build knowledge in an intentional way by transferring the expert's knowledge and his or her own experiences into knowledge that the learner can recall and use in flexible ways (Kolodner & Guzdial, 2000). The cases become the basis for the learner's cognitive library as he or she learns directed lessons from the cases and can recall and use those lessons when they are applicable to future situations.

Case-based learning has been used in many disciplines, including a variety of medical and health professions, and prior research supports a number of common characteristics in building an effective case. For example, cases should be authentic or situated in real-world experiences (Kim et al., 2006; Kolodner, 1997; Thistlethwaite et al., 2012). Learning through these cases should be facilitated by experts, and students should clearly demonstrate the experts' skills and abilities (Bagdasarov et al., 2012; Jonassen & Hernandez-Serrano, 2002; Kolodner & Guzdial, 2000; Thistlethwaite et al., 2012).

Scaffolding describes a form of causal modeling in which expert support is offered in the context of a learner's readiness for skill development and then gradually reduced as the learner develops new skills (Choi & Lee, 2009; Jonassen, 1996). Collaborative and reflective learning practices incorporated into group processing of cases facilitates identification of relevant information, promotes problem-solving, and assists learners to consider possible outcomes of various interventions (Curran et al., 2008; Jonassen & Hernandez-Serrano, 2002; Kaddoura, 2011; Kolodner, 1997; Thistlethwaite et al., 2012; Williams, 2009).

Learning outcomes, including increased student engagement in learning, knowledge acquisition, short-term learning, improved critical thinking, and higher course grades, have been documented through case-based instructional methods in a variety of disciplines (Kaddoura, 2011; Mounsey & Reid, 2012; Thistlethwaite et al., 2012). However, there is great variety in how these learning outcomes have been measured in the research process. Student satisfaction with case-based learning is consistently high in the literature, with identification of ease of learning, effectiveness in delivering content, collaborative problem-solving, relevance to clinical practice, and motivation or engagement in the case as important factors. When group work and online cases were available, students also rated them favorably (Curran et al., 2008; Kim et al., 2012; Thistlethwaite et al., 2012; Williams, 2009).

Case-based reasoning in occupational therapy education has been used as a means of engaging students in learning and to support collaboration among students. The design of cases has included text-based cases, actors portraying clients, live interviews of clients, and videotapes of therapists and patients. These have been presented in classrooms as well as over internet platforms (Bazyk & Jeziorowski, 1989; Liu et al., 1997; Lysaght & Bent, 2005; Neistadt & Smith, 1997; Neistadt, Wight, & Mulligan, 1998; VanLeit, 1995). Consistent with literature in related disciplines, occupational therapy student satisfaction has been reported with instructional methods that use case-based reasoning and with learning outcomes that included knowledge acquisition, skill development, and readiness for fieldwork (Cook & Triola, 2009; Lysaght & Bent, 2005; Tomlin, 2005). While there have been attempts to quantify reasoning using a few standardized measures, these attempts have simply identified the components of reasoning skills of allied health students at different points in time in a curriculum or in comparing the reasoning skills of students in different disciplines (Lederer, 2007; Vogel et al., 2009). These attempts to quantify reasoning have not been measured with consideration of instructional methods.

Standardized measures of clinical reasoning are not currently available to occupational therapy educators and researchers. However, measures of critical thinking have been used in research in the fields of psychology, education, and health care. Although the constructs of clinical reasoning and critical thinking are not identical, they are closely related. Critical thinking has been described as "the process of purposeful, reflective judgment focused on deciding what to believe or what to do" (Insight Assessment, 2014, p. 14). This requires analysis and evaluation of information and situations, and making inferences about this type of information to make reasoned decisions (Insight Assessment, 2014). The components of critical thinking identified in many standardized measures include analysis, inference, evaluation, induction, and deduction. These skills are consistent with early foundational descriptions of clinical reasoning in occupational therapy (Fleming, 1991; Mattingly, 1991; Mattingly & Fleming, 1994; Rogers, 1983) as well as the more contemporary considerations of types of clinical reasoning used in the discipline (Boyt Schell, 2009; Boyt Schell & Schell, 2008). Although various types of cases have been used in occupational therapy education to facilitate clinical reasoning in learners, technology now allows for the use of online video libraries of cases that show therapists working with actual clients in genuine clinical settings. Although many universities subscribe to these libraries, there is a lack of evidence that these cases help to develop reasoning skills. This study aimed to contribute evidence that instructional methods contribute to the development of the clinical reasoning skills required of competent clinical and professional occupational therapy practice.

## Method

This research study aimed to examine the effect of video cases presented over an online platform combined with a clinical reasoning learning activity on the development of clinical reasoning skills in entry-level occupational therapy students. To examine fully the effectiveness of the video case-based learning activity, clinical reasoning measures were compared between groups of students using different instructional methods, namely video cases or text cases.

This quasi-experimental research study compared the effects of the online video cases combined with an explicit clinical reasoning activity to the effects of text-based cases on the development of clinical reasoning skills in occupational therapy students. An objective, quantitative measure of clinical reasoning was administered as a pretest and posttest for the two types of cases for the nonequivalent groups.

### Participants and Learning Activities

Students in an entry-level occupational therapy program at a midsize, mid-Atlantic university participated in this research study. The 61 participants were enrolled in a physical rehabilitation course offered during the second year of this combined Bachelor of Science and Master of Science program. Therefore, the students had already been introduced to foundational concepts of the profession and the process and content of clinical reasoning. However, this course required higher level application and synthesis skills with consideration of clients' specific strengths and needs. Data was collected during two consecutive offerings of this course –spring 2014 and spring 2015. The students were enrolled in two distinct sections of this course, so convenience sampling decreased the possibility of outside factors contributing to potential differences in results.

Participation in the research study, which was approved by the university Institutional Review Board, in no way influenced assignment grades or course grades. Although the case-based assignments used for the research were a requirement of the course, the students were given the option to decline participation in the research study and the objective measure of clinical reasoning. The 61 students who participated in the research reflected an 81.3% rate of participation of all students enrolled in the course. Grade point average (GPA) was normally distributed for all of the participants; however, age was not, as determined by the Shapiro-Wilk's test ( $p > .05$ ).

The control group consisted of 31 female students with a mean age of 20.74 years ( $SD$  0.77) and a mean GPA of 3.67 ( $SD$  0.19). These students participated in case-based learning activities using text-based cases as learning tools. The instructor used video clips to illustrate points made in class or to facilitate class discussion. However, these video clips were used as isolated examples of client or therapist performance and did not use the principles of case-based learning.

The students in the control group used written case studies from a textbook as learning activities. The cases included more detailed client histories, such as the client's occupational profile. The students discussed the cases in class, with the instructor offering expert insight into the client characteristics and relevant considerations for occupational therapy, which included scaffolding techniques of case-based learning. The students then answered directed questions about the cases, which included how they would plan and implement assessments and interventions and how they would deal with situations that emerged during the therapy process. Although the discussion facilitated clinical reasoning in context, the types of reasoning and critical thinking skills were not explicitly identified by name. The students were assigned two other text-based case studies following the same assignment guidelines. They used the textbook to complete the assignments outside of class, with the first assignment completed in small groups of two or three students and the second completed individually.

The intervention group of 30 participants included 28 female and two male students. The mean age of 22.47 years ( $SD$  3.38) was higher than the control group, and the mean GPA of 3.59 ( $SD$  0.23) was lower than the control group. These students participated in case-based learning activities using videos from the International Clinical Educators, Inc. (ICE) Learning Center. This online video library was available to the university through a paid subscription and includes videos of occupational therapists

and other health professionals interacting with clients in actual clinical settings. Viewing of the comprehensive case studies in class was followed by an explicit discussion of the types of clinical reasoning used by the therapist in the videos and was consistent with expert guidance and scaffolding recommended for case-based reasoning. Consistent with procedures for the control group, the students in this intervention group completed two additional assignments outside of class, with the first assignment completed in small groups of two or three students and the second completed individually.

The cases chosen for the intervention group from the ICE video library included multiple therapy sessions for the same client. The sessions took place in settings that were difficult to simulate in a classroom setting and focused on clients with complex conditions. The students developed an occupational profile for the client, identified a model and frame of reference to guide their considerations of the case, located evidence to support their reasoning, and explicitly described the salient points of each type of clinical reasoning that was evident in the cases. Finally, the students reflected on the case to describe how they could incorporate use of the case into their own cognitive library. Two occupational therapy faculty members at the university developed this learning activity and five experts, including clinicians and academicians, validated it.

The students in both the control and intervention groups participated in classroom discussions of the assigned cases, with the instructor addressing questions about the assignment. The first assignment was addressed in small groups during class with the instructor facilitating the discussion. An additional case was assigned for work outside of class and was completed in small groups of two to three students. This allowed the students to formulate opinions and to justify those opinions to other members of their group. Finally, another case was completed outside of class by students individually to promote personal responsibility for the demonstration of learning.

To determine if this sample size was adequate, an effect size of 0.57 was calculated from similar studies (Coker, 2010; Kaddoura, 2011) and a pilot study conducted in 2013 (Murphy, 2016). Assuming this effect size was consistent, a sample size of 61 would detect changes between the groups and would also detect changes in each group between pre and posttesting of clinical reasoning.

### **Instrument**

The Health Science Reasoning Test (HSRT) was used as a pretest and a posttest for all of the participants as an objective measure of clinical reasoning. This multiple-choice test is a 33-item subset of the California Critical Thinking Skills Test designed to measure critical thinking among students in comparison to an appropriate normative data set. The HSRT focuses on the health professions and frames questions in the context of health care. The following types of critical thinking are scored: analysis, inference, evaluation, deduction, and induction (Insight Assessment, 2014). Analysis, which includes gathering specific pieces of information, is often used by occupational therapy practitioners to gain insight into patients and specific details that contribute to occupational performance. Inference allows for the use of evidence in drawing conclusions and may contribute to intervention planning. Evaluation allows the practitioner to judge the quality of the conclusions reached; for example, considering the outcomes of interventions. Induction allows the practitioner to draw inferences and make decisions about what is believed to be true based on knowledge, experiences, or observations of the client. This skill may be used throughout the occupational therapy process. Deduction, however, bases judgments on what is already known to be truth or fact and may be used in applying theory or evidence to practice. In the HSRT, these five categories are combined for a total score and to determine a percentile score. In this research study, the HSRT scores were evaluated according to normative data for undergraduate students in an occupational therapy program, as the participants were in the undergraduate phase of their educational process. Insight Assessment (2014) has demonstrated content validity, construct validity, and reliability for the HSRT.

## Data Analysis

The HSRT was administered as a pretest at the beginning of the academic semester. Then, the students in each section of the course participated in the assigned learning activities using either the text cases with directed questions or the video cases with the paired clinical reasoning learning activity. The students in both sections followed the same timelines and general guidelines for the assignments based on the principles of case-based reasoning. At the end of the 15-week semester, the students took the HSRT again as a posttest measure of reasoning.

Paired *t*-tests were first used to examine changes from pretest to posttest in the reasoning scores of each group. Analysis of covariance (ANCOVA) was then used to control for preexisting differences in the groups regarding age and GPA.

## Results

Data from the HSRT pretest and posttest scores was examined according to overall and percentile scores, and the five types of reasoning—inductive reasoning, deductive reasoning, analytic reasoning, inference, and evaluation—were used to determine the overall score. The students in the control group, who used text-based case studies, demonstrated improved performance from the pretest to the posttest in overall score, percentile, deduction, analysis, inference, and evaluation; they demonstrated a decreased score in induction. When paired *t*-tests were conducted, however, none of these changes were determined to be statistically significant (see Table 1).

**Table 1**

*Comparison of the HSRT Pretest and Posttest Scores, Control Group (Text Cases)*

	Pretest		Posttest		Difference	<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
Overall	22.00	3.84	22.87	4.56	0.87	1.43	0.17
Percentile	72.45	20.68	76.48	23.12	4.03	1.28	0.21
Induction	7.97	1.43	7.68	1.92	-0.29	1.18	0.25
Deduction	6.71	1.97	7.26	2.03	0.55	1.79	0.08
Analysis	4.26	1.09	4.55	1.21	0.29	1.22	0.23
Inference	4.06	1.24	4.23	1.09	0.17	0.63	0.53
Evaluation	4.94	1.18	4.97	1.33	0.03	0.18	0.86

The students in the intervention group, who used video case studies and the clinical reasoning learning activity, demonstrated improved performance on the posttest in all measures of reasoning. The use of paired *t*-tests identified statistically significant changes from pretest to posttest in overall score, percentile, induction, deduction, and evaluation ( $p < .05$ ); however, the improved analysis and inference scores were not statistically significant (see Table 2).

**Table 2**

*Comparison of the HSRT Pretest and Posttest Scores, Intervention Group (Video Cases)*

	Pretest		Posttest		Difference	<i>t</i>	<i>p</i>
	Mean	<i>SD</i>	Mean	<i>SD</i>			
Overall	20.90	3.90	23.27	3.52	2.37	4.07	<b>&lt;0.001</b>
Percentile	65.83	23.20	77.90	18.36	12.07	3.82	<b>0.001</b>
Induction	7.43	1.14	7.97	1.16	0.54	2.39	<b>0.024</b>
Deduction	6.47	2.11	7.40	1.75	0.93	3.16	<b>0.004</b>
Analysis	4.17	1.37	4.53	1.17	0.36	2.01	0.054
Inference	3.77	1.17	4.20	1.24	0.43	2.04	0.051
Evaluation	4.70	1.06	5.10	0.99	0.40	2.05	<b>0.050</b>

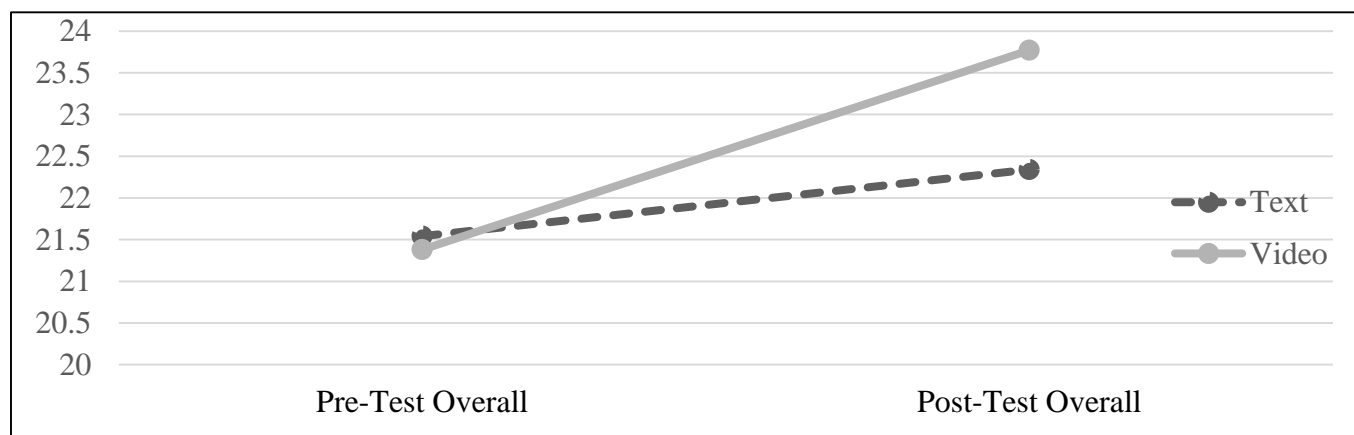
An ANCOVA was then conducted to adjust for preexisting differences between the groups regarding age and GPA and to examine differences between the groups for all of the reasoning scores. Levene's Test of Equality of Error Variances was calculated for each test and subtest of the HSRT, with no statistically significant differences identified in the variances of the scores between the groups, thus demonstrating homogeneity of variance in all measures of the HSRT. Age did not have a statistically significant effect on any measure of the HSRT. GPA did have a statistically significant effect on the HSRT scores in subjects in the areas of overall scores ( $F_{(1,59)} = 4.00, p = 0.05$ ), percentile scores ( $F_{(1,59)} = 4.26, p = 0.04$ ), and induction scores ( $F_{(1,59)} = 4.44, p = 0.04$ ), which was addressed through the use of ANCOVA (see Table 3). The intervention group scored higher than the control group in overall scores, percentile scores, and all subtests. However, the only statistically significant difference between the groups was in inductive reasoning skills ( $p < .05$ )

**Table 3**

*The HSRT Comparisons between Groups, ANCOVA*

	F-value	Significance ( $p$ )
Overall Score	2.92	0.09
Percentile	2.83	0.10
<b>Induction</b>	<b>5.08</b>	<b>0.03</b>
Deduction	0.17	0.68
Analysis	0.00	1.00
Inference	0.69	0.41
Evaluation	1.11	0.30

A closer examination of the total and percentile adjusted means demonstrates an improvement for both groups, as shown in Figures 1 and 2. The traditional method of presenting text cases, as well as the use of the video case studies and the associated clinical reasoning activity, facilitated improved critical thinking in entry-level students. Although only the intervention group, which used the video cases, showed a statistically significant difference between the pretest and posttest for overall and percentile scores, the differences between the two groups' posttest scores were not statistically significant at the  $p < .05$  level.



*Figure 1: The HSRT pretest to posttest comparison of adjusted means, overall score.*



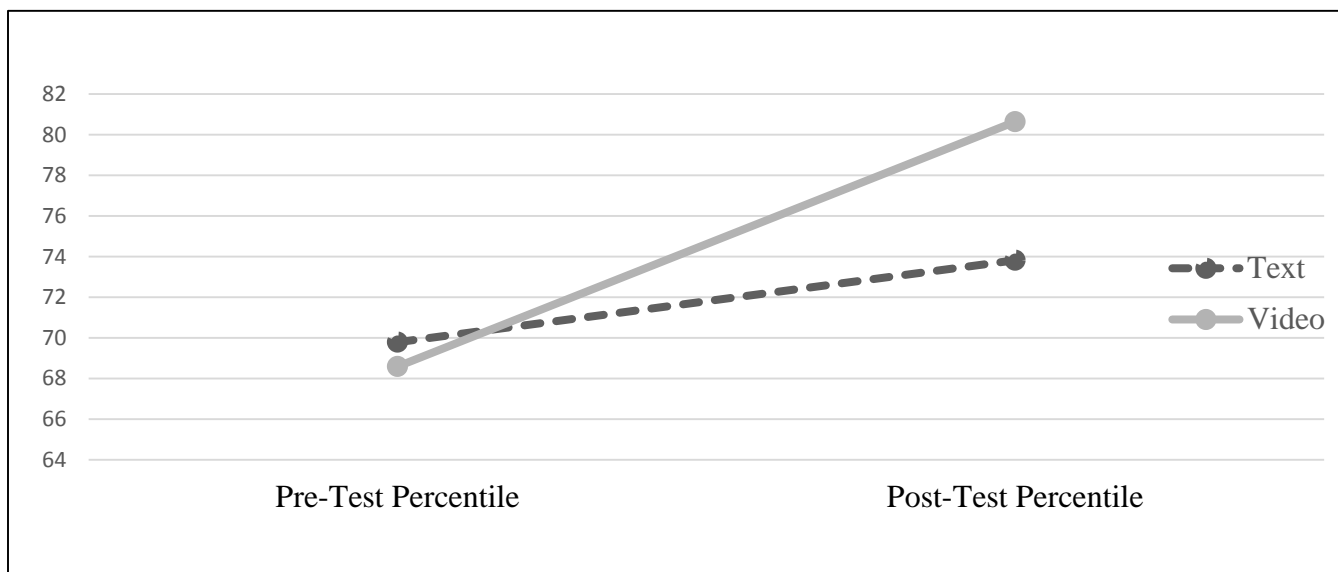


Figure 2: The HSRT pretest to posttest comparison of adjusted means, percentile score.

The difference in the posttest scores, however, was statistically significant for inductive reasoning ( $F=5.08, p = .03$ ). Although the control group had a higher pretest score in induction, the intervention group had a higher posttest induction score (see Figure 3). Out of a possible nine points for inductive reasoning, the posttest mean of 7.62 for the control group scored in the moderate range, while the posttest mean of 8.03 for the intervention group scored in the strong range of inductive reasoning.

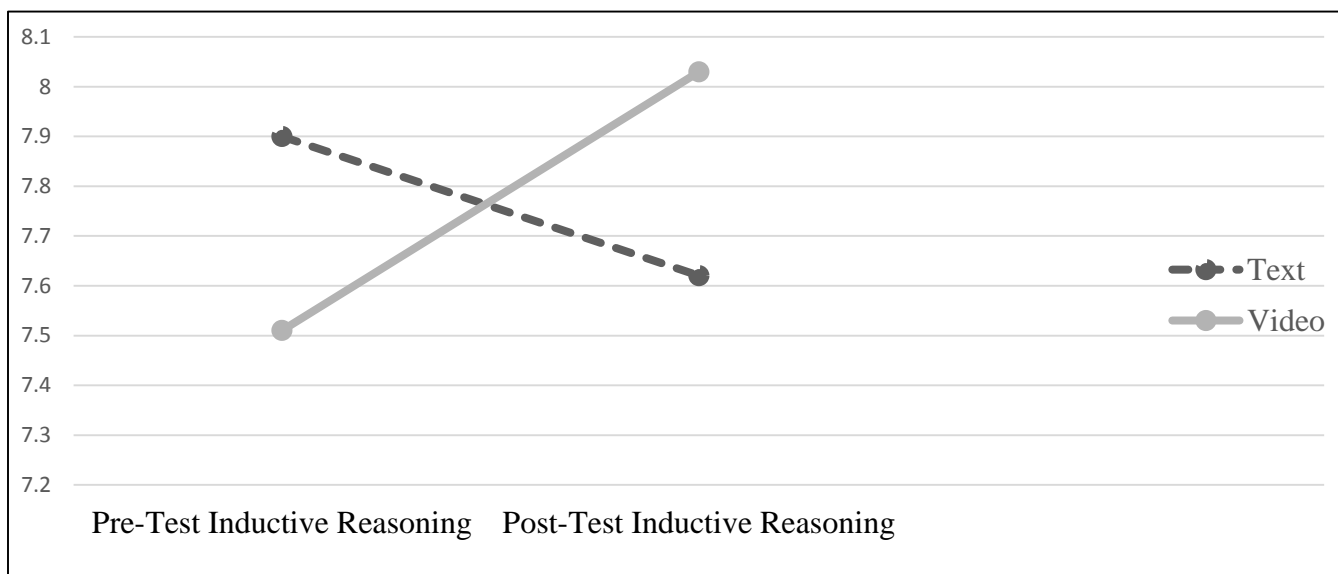


Figure 3. The HSRT pretest to posttest comparison of adjusted means, inductive reasoning.

### Discussion

The complex nature of clinical reasoning, as well as the necessity of effective reasoning as a basis of competent practice as an occupational therapist, has long been acknowledged by scholars and clinicians. Academic programs must therefore ensure that this skill is demonstrated by students preparing to enter the profession. And although case-based reasoning has been an educational underpinning of many types of academic programs in diverse disciplines, this has not been effectively linked to outcomes generated by specific instructional methods. This research used the HSRT as an objective measure of reasoning to identify the most effective types of cases and learning activities to

facilitate this positive change in occupational therapy students. In fact, comprehensive video case studies paired with specific learning activities designed to facilitate clinical reasoning promoted significantly stronger inductive reasoning skills in entry-level students when compared to those who used text-based case studies.

Occupational therapy clinicians and researchers acknowledge that clinical reasoning cannot be performed without explicit consideration of each specific client and his or her abilities, limitations, contexts, medical condition, culture, and values (Boyt Schell, 2009; Boyt Schell & Schell, 2008; Fleming, 1991; Mattingly, 1991; Mattingly & Fleming, 1994; Rogers, 1983). The video cases and associated explicit explanations of the reasoning process offered a more realistic and comprehensive examination of the client and his or her context. This is also supported by the need for authenticity in cases described by Kolodner (1997) and Kim et al. (2006).

Inductive reasoning is a necessary underpinning of clinical reasoning, as the occupational therapist must gather information from multiple sources and in complex ways to truly understand how a client engages in occupation and to determine what barriers may be addressed in the therapeutic process. Inductive reasoning is one of the key components of critical thinking identified in standardized measures, such as the California Critical Thinking Skills Test and the HSRT (Insight Assessment, 2014), and is used in research in the health professions (Coker, 2010; Kaddoura, 2011). In addition, Rogers (1983) first described how inductive reasoning, deductive reasoning, ethical decision-making, knowledge, and experience are needed for competent clinical reasoning in occupational therapy. While text-based cases typically deliver information to learners in direct and explicit ways, the video cases require students to make observations, interpret information, and use judgment to plan and facilitate meaningful interventions for clients. The videos allow for a richer and more authentic experience to prepare students for the inductive components of clinical reasoning, which is a core, albeit complex, competency of an occupational therapy practitioner. The contextually embedded cases that are inherent in the videos cannot be provided by a written text that describes the conclusions that have already been drawn from observations and client performance.

There were several limitations to this study. First, the convenience sampling technique may have threatened internal validity, as equivalency between the groups could not be ensured. The statistical test of ANCOVA was used to control for this. In addition, the time measured to anticipate a change in clinical reasoning was brief, namely one academic semester. Including these types of learning activities in subsequent courses and measuring over time may provide additional insights. Vogel et al. (2009) explored a positive change in reasoning in occupational therapy students over time; therefore, this measurement and the learning activities, if repeated over time, could add to the link between instructional methods and clinical reasoning over the course of more than one academic semester.

### **Implications for Occupational Therapy Education and Further Research**

Case-based learning has been a staple of graduate and undergraduate education in a variety of health disciplines (Curran et al., 2008; Jonassen & Hernandez-Serrano, 2002; Kaddoura, 2011; Kolodner, 1997; Thistlethwaite et al., 2012; Williams, 2009) and in occupational therapy (Bazyk & Jeziorowski, 1989; Liu et al., 1997; Lysaght & Bent, 2005; Neistadt & Smith, 1997; VanLeit, 1995). And although there is evidence for the use of this educational model, this evidence has not linked case-based learning specifically to clinical reasoning in occupational therapy in the past (Boyt Schell & Schell, 2008; Falk-Kessler & Ciaravino, 2006; Lederer, 2007; Mattingly, 1991; Rogers, 1983; Unsworth & Baker, 2016; Vogel et al., 2009). Although case-based learning outcomes have included student engagement, knowledge acquisition, and higher course grades (Kaddoura, 2011; Mounsey & Reid, 2012; Thistlethwaite et al., 2012), this study provides a more vital link to the inductive reasoning skills necessary for effective clinical reasoning and to address the complexities of the provision of individualized services to individuals.

There is a clear indication that case-based reasoning contributes to student confidence in the ability to perform clinical reasoning in the context of a physical rehabilitation course. More specifically,

comprehensive video case studies accompanied by a learning activity that explicitly asks students to explore and explain the reasoning used in the cases improve inductive reasoning. The video cases challenged the learners to make observations, analyze and refine these observations, and then draw conclusions that could lead to decision-making about occupational therapy interventions and services. This process of analysis and decision-making required more inductive reasoning from the learner than reading a text-based case (which drew some conclusions for the reader in the written descriptions of client performance). There are implications for further study of the student perceptions of reasoning related to the type of case presented and for a better understanding of the student experience in developing clinical reasoning competence. Additional research could address study limitations if measured over longer periods and while using video cases and the constructs of case-based reasoning.

Occupational therapy practitioners must develop the ability to translate what they have learned in the didactic setting into practice and to apply knowledge and information obtained from a client to develop interventions. This research study supports how case-based reasoning and the use of comprehensive video case studies combined with an explicit learning activity do, in fact, promote the inductive reasoning process required of occupational therapy students preparing for entry into the field.

This evidence has several implications for occupational therapy education. Since video case studies and targeted clinical reasoning activities increase inductive reasoning, they may be used in many ways throughout a curriculum. Video cases could be used across courses that target different areas of practice to facilitate reasoning in different settings. Introducing more frequent and diverse videos may promote a wider range of reasoning skills for students. Video cases could be used in preparation for fieldwork experiences in which students are learning to perform clinical reasoning simultaneously while interacting with clients. Infusing this building block of clinical reasoning across a curriculum may ultimately better prepare students for competence in the complex skill of clinical reasoning.

**Lynne F. Murphy, EdD, OTR/L**, earned a BS in occupational therapy, a MS in health science, and an EdD in Instructional Technology from Towson University. Her 30 years of clinical experience have been focused on many aspects of physical rehabilitation. Dr. Murphy has been an occupational therapy educator for 20 years at Towson University and East Carolina University.

**Wendy B. Stav, PhD, OTR/L, SCD, FAOTA** holds a BS in occupational therapy from Quinnipiac University and a PhD in occupational therapy from Nova Southeastern University. For almost 20 years her work has focused on driving and community mobility across the lifespan. Dr. Stav has worked in academia for 16 years in entry and postprofessional levels.

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