

2024

Exploration of Student Reflections using the Rehabilitation Treatment Specification System (RTSS) as an Intervention Planning Framework

Tracey E. Recigno
Hawaii Pacific University

Alison Bell
Thomas Jefferson University

M. Ferraro
Moss Rehabilitation Research Institute

Follow this and additional works at: <https://encompass.eku.edu/jote>



Part of the [Occupational Therapy Commons](#)

Recommended Citation

Recigno, T. E., Bell, A., & Ferraro, M. (2024). Exploration of Student Reflections using the Rehabilitation Treatment Specification System (RTSS) as an Intervention Planning Framework. *Journal of Occupational Therapy Education*, 8 (1). Retrieved from <https://encompass.eku.edu/jote/vol8/iss1/18>

This Educational Innovations is brought to you for free and open access by the Journals at Encompass. It has been accepted for inclusion in Journal of Occupational Therapy Education by an authorized editor of Encompass. For more information, please contact laura.edwards@eku.edu.

Exploration of Student Reflections using the Rehabilitation Treatment Specification System (RTSS) as an Intervention Planning Framework

Abstract

Teaching intervention planning is enhanced with an intentional course design that incorporates critical thinking in order to prepare the next generation of occupational therapy practitioners. The context for this study was a physical disabilities intervention course for an entry-level occupational therapy program that used Fink's Taxonomy of Significant Learning as a basis for learning outcomes. A novel formative intervention planning assignment required students to use the Rehabilitation Treatment Specification System (RTSS) as a framework to guide their thinking. A qualitative retrospective content analysis of student reflections at the end of the course revealed that the RTSS added value to their learning. Two main themes emerged from the student reflections; *Growth takes Practice* to use this framework effectively and the RTSS was perceived as a *Bridge from Classroom to Practice*. These findings support the possible benefits of integrating this framework into occupational therapy curricula as a means to help students further develop critical thinking and clinical reasoning skills. Providing opportunities to scaffold learning may enhance the student learning experience and integration of the framework into future intervention planning and delivery.

Keywords

RTSS, critical thinking, reflection, occupational therapy education

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Exploration of Student Reflections Using the Rehabilitation Treatment Specification System (RTSS) as an Intervention Planning Framework

Tracey E. Recigno, PhD, OTD, OTR/L¹

Alison Bell, OTD, OTR/L²

Mary Ferraro, PhD, OTR/L³

Hawaii Pacific University¹

Thomas Jefferson University²

Moss Rehabilitation Research Institute³

United States

ABSTRACT

Teaching intervention planning is enhanced with an intentional course design that incorporates critical thinking in order to prepare the next generation of occupational therapy practitioners. The context for this study was a physical disabilities intervention course for an entry-level occupational therapy program that used Fink's Taxonomy of Significant Learning as a basis for learning outcomes. A novel formative intervention planning assignment required students to use the Rehabilitation Treatment Specification System (RTSS) as a framework to guide their thinking. A qualitative retrospective content analysis of student reflections at the end of the course revealed that the RTSS added value to their learning. Two main themes emerged from the student reflections; *Growth takes Practice* to use this framework effectively and the RTSS was perceived as a *Bridge from Classroom to Practice*. These findings support the possible benefits of integrating this framework into occupational therapy curricula as a means to help students further develop critical thinking and clinical reasoning skills. Providing opportunities to scaffold learning may enhance the student learning experience and integration of the framework into future intervention planning and delivery.

Introduction

The occupational therapy intervention process is complex and multifaceted. Clinical intervention courses aim to develop students who not only understand how to provide an intervention but can also articulate the rationale for the evaluation and treatment plan. Occupational therapy educators strive to provide not only concrete didactic education but also cultivate the higher-order critical thinking and clinical reasoning skills students need to move into the complex realm of occupational therapy practice and client care. Intentional course design is necessary to ensure clinical intervention courses facilitate the critical thinking skills needed for practice.

When engaging in intentional curriculum and course design, there are several frameworks educators can use as a guide. Sweetman (2018) emphasized the importance of considering the type of course design to best support occupational therapy student development. Ideally, educators should identify where students are in their learning process to appropriately build on knowledge and experiences, especially when creating course structures and learning opportunities for critical thinking. Hierarchical approaches such as Bloom's Taxonomy (Anderson et al., 2001) can help progress the depth of learning, however, Bloom's Taxonomy often misses critical elements necessary for well-rounded engagement with the material (Shelley, 2020). Andragogy, the theory of adult learning, emphasizes the importance of contextualizing learning within real-life experiences that are relevant to the student's future professional activities (Knowles et al., 2020). Fink's (2013) Taxonomy of Significant Learning demonstrates an interconnected approach to curriculum design rather than a stepped sequential style. Fink (2013) outlined six unique taxons: *foundational knowledge, application, integration, human dimensions, caring, and learning how to learn*. When educators use Fink's taxonomy and *backward design* of starting with the end in mind to craft their course or curriculum content, the result is a learning experience that is more dynamic, fluid, and intentional (Branzetti et al., 2019; Fallahi, 2008; Fink, 2013). Incorporating this method requires educators to be thoughtful and reflective in their course design, which can result in a deeper and richer learning experience for students. Learning in this way can support student autonomy and future success in non-linear learning environments and when learning abstract, complex topics that require critical thinking, such as intervention planning.

Intentional course design that fosters critical thinking in intervention planning is necessary to prepare the next generation of occupational therapy practitioners. Occupational therapy intervention approaches are divergent in nature, having many potential avenues to address the occupational needs of a client. This process of identifying an appropriate treatment approach involves significant cognitive skills such as critical thinking, problem-solving, analysis, and therapeutic use of self (Schell & Schell, 2017). Students must also develop knowledge and learn various psychomotor skills required to deliver safe and effective client care (Accreditation Council for Occupational Therapy Education, 2018). A theory-based approach to intervention planning supports a deeper exploration of the evidence as students are required to develop and support a hypothesis (Portney, 2020). Grounding an intervention through a theoretical lens is in contrast to teaching interventions in isolation from the context and

the client. Instructors who craft learning experiences that identify the theory and research behind the interventions displayed in occupational therapy practice, help students prepare for their own work. Shifting the focus from intervention planning to critical thinking could help entry-level occupational therapy programs develop students who can move beyond classroom lab experiences to become clinicians who can methodically evaluate their clients' needs.

Rehabilitation Treatment Specification System

An emerging area of research is pointing to the use of a structured approach that may be effective in developing critical thinking skills in intervention planning. The Rehabilitation Treatment Specification System (RTSS) is a relatively new framework to describe the interventions of rehabilitation professionals. As context, the RTSS was the result of grant efforts from 2009 to 2018 with the intent to create a taxonomy for the multi-disciplinary field of rehabilitation. The development of the RTSS was a response to the many researchers who have cited the critical need to specify treatments in order to advance the field of rehabilitation (Dijkers, 2019; Hildebrand et al., 2012; Keith, 1997; Whyte et al., 2021). The RTSS provides a common language to describe the components of an intervention and how the intervention elicits a change in the client and an explicit articulation of the treatment theory (Hart et al., 2018). The most recent summary of that work is published in the *Archives of Physical Medicine and Rehabilitation* (Hart et al., 2019; Van Stan et al., 2019; Whyte et al., 2019; Zanca et al., 2019). Practitioners who wish to use the RTSS can request the manual from the American Congress of Rehabilitation Medicine (ACRM; Lin et al., 2021).

While critical thinking or clinical reasoning was not an overt goal of the original grant, the lengthy discussions that led to the RTSS put a spotlight on therapist decision-making about the ingredients they deliver. The resulting framework of *ingredients acting through a mechanism of action to effect change in a target* created treatment specifications that better described treatment choices (Hart et al., 2018). Therefore, the RTSS can be a useful clinical tool to help clinicians explicitly illustrate their critical thinking and articulate what they do in practice and may be useful in developing the higher-order critical thinking and clinical reasoning skills students need to develop and implement occupational therapy interventions.

A review of the literature highlighted the dearth of research on using the RTSS in entry-level healthcare practitioner education. Ness et al. (2021) described the use of a novel strategy of using the RTSS as a framework to guide student clinical-decision making within a speech-language pathology curriculum. The RTSS framework was described as supportive of the development of content-specific knowledge and clinical reasoning (Ness et al., 2021). Fasoli et al. (2019) emphasized the value of using the RTSS in occupational therapy; however, there is a need for more research on specific applications in entry-level occupational therapy education. The authors of this paper were unaware of peer-reviewed literature specific to occupational therapy education using the RTSS as a framework at the time the article was written.

As a result, the researchers proposed the following research question: *What are entry-level occupational therapy students' perceptions of the RTSS within a physical disabilities intervention course?* The researchers also wanted to identify if there was a specific Fink (2013) taxon that was most connected to the RTSS. Therefore, a secondary research question emerged: *In what taxon of Fink's Taxonomy of Significant Learning is the RTSS most aligned?* Understanding occupational therapy student perspectives could provide insight into strategies that may be perceived as effective for building skills for intervention planning in entry-level programs.

Methods

Context

This study took place in a physical disability intervention course for an entry-level occupational therapy master's and doctoral program. This course occurred in the final semester of didactic coursework before Level II fieldwork. The goal of the course was to create an experience where students felt they had a strong base of knowledge to move into the next phase of their learning in Level II fieldwork and also develop the skills to continue learning throughout their careers. The course used an intentional design to facilitate deeper learning and used the core tenets of Fink's (2013) strategies for significant learning. Fink's (2013) taxonomy for curriculum design guided the creation of the following course-specific learning goals:

1. **Foundational Knowledge:** Understand the principles of safe and effective preparatory, purposeful, and occupation-based intervention approaches and techniques.
2. **Application:** Analyze and choose appropriate theories and types of clinical reasoning to guide evaluation, intervention, and the overall occupational therapy process.
3. **Integration:** Connect client factors and preferences with appropriate intervention strategies to address the needs of clients, groups, and populations.
4. **Human Dimension:** Come to see themselves as integral members of the interprofessional team and articulate the unique value occupational therapy offers to diverse practice settings.
5. **Caring:** Value human diversity and use therapeutic use of self to acknowledge the lived experience of the client. Be ready to develop innovative approaches to address health disparities and occupational injustice.
6. **Learning How to Learn:** Identify sources of information through evidence-based practice strategies to problem solve and critically think about practice challenges.

To promote the achievement of the established course outcomes and reduce barriers to learning, the intervention course content modules were organized by areas of occupation and had a consistent structure over the 16-week course. Each week followed a similar sequence of 3.5 hours of lecture content at the start of the week, followed by 3 hours of lab time later in the week to integrate and practice. Students completed and submitted lab guide assignments each week as a means of formative feedback.

A novel approach used by this program was the use of the RTSS as a framework for intervention planning within these lab guides. To help students develop an understanding of the RTSS, they were provided with a lecture on the first day of class that outlined the core concepts of the RTSS. Then, each week the lab assignment required students to consider a client case that was reviewed in class, propose an intervention approach, create a goal, and fill out a chart that asked them to identify the elements of the RTSS for one specific target (see Appendix A). Students were given feedback on their completed assignments and encouraged to integrate the feedback into subsequent assignments. At the end of the semester, students completed a full treatment plan for a selected client case. The format of this assignment included elements of the RTSS when describing certain aspects of their treatment approach and rationale. The final assignment for this course asked students to complete a short reflection on their perceived areas of growth for each of the course objectives that were based on the six Fink (2013) taxons.

Design

The study design used a qualitative content analysis (QCA) approach to retrospectively review student written reflections. Qualitative content analysis can be defined as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p. 1278). To answer the secondary research question, the study employed a quantitative analysis of the qualitative data as described by Morgan (1993). Qualitative content analysis does not support a researcher’s ability to fully make meaning of a phenomenon but does allow for focus on one specific aspect of the lived experience (Elo & Kyngäs, 2008; Schreier, 2012). For this study, the researchers selected QCA to retrospectively analyze existing text data. Although the text data was rich for analysis, it only offered a narrow view of the overall student learning experience. Consequently, there may be a lack of depth to understanding the phenomenon but nonetheless, the data gathered could provide helpful insights into the population.

An important element of QCA is structured data analysis. For this study design, the researchers selected systematic text condensation (STC). Systematic text condensation is a research procedure rooted in a phenomenological approach described by Giorgi (Malterud, 2012). Giorgi’s (2009) psychological phenomenological analysis described a four-step process to explore the perception of how something is experienced. Systematic text condensation expanded on this work to include pragmatic procedures, which guided data analysis for this QCA. To answer the secondary research question, the study employed a quantitative analysis of the qualitative data as described by Morgan (1993).

Research Team and Reflexivity

The research team included the authors. TR was the course instructor with formal training in qualitative methodology. AB was a faculty member with experience in qualitative research and the use of the RTSS. MF was a research associate and a member of the team that developed the RTSS. MF was the individual who provided a lecture on the RTSS to the students. All authors identified as female. TR and AB were

faculty members who had significant interaction with the student participants; MF had little interaction with student participants. All researchers engaged in bracketing. Bracketing is part of the qualitative tradition where researchers develop diary entries to acknowledge their potential biases and preconceived ideas; this was updated during the data analysis process (Tufford & Newman, 2012). These reflective journals were discussed during research meetings and acknowledged by all team members.

Setting and Participants

This study took place in a university located in the northeast region of the United States. The university was situated within an academic medical institution in an urban setting. Participants in this study were second-year occupational therapy students enrolled in either the master's or doctoral entry-level occupational therapy program. The inclusion criteria for selection required students to mention the word "RTSS" in their reflection. Additional demographic data and consent were not obtained as the study used a retrospective analysis of deidentified student reflective writings. The assignment was not developed for research purposes and students did not know that their work would be analyzed for a research question. The Thomas Jefferson University Institutional Review Board approved this work (Study #22E.269).

Data Collection

The researcher who taught the course downloaded the reflection data from the online learning management system and placed the content in a secure folder on her password-protected computer. The researcher then de-identified the data and placed it in a folder shared with the research team in the password-protected cloud content management site. This shared folder was also used to store all field notes, memos, reflective journals, and the data analysis code book.

Data Analysis

The QCA was guided by the STC approach to qualitative research (Malterud, 2012). The first step in the methodology was to create an overall impression from the collected data. The method asked the researchers to identify and discuss preliminary themes to derive meaning from a large amount of information. This method was a strong fit for this work as the assignment was not developed to evaluate the experiences using the RTSS; rather, meaningful unprompted reflections were found in a large percentage of students related to the RTSS. The researchers' decision to further explore the reflective materials was made after the close of the course and was driven by preliminary themes that were found while reviewing the writings. The first stage of the STC process was completed individually and then researchers discussed their impressions together to guide future analysis.

In stage two of STC, the researchers identified meaning units and fragments of text related to the study question. Identification of the meaning units allowed the researchers to focus coding efforts on data that was relevant to the study question and intent. The researchers first reviewed the reflective writings for explicit mention of the RTSS and then those writings were reviewed for meaning units related to the RTSS. From the

meaning units, the coding process followed. Stage three moved from codes to interpretation by assembling codes into meaningful groupings. In stage four, the researchers developed themes from the groupings. Stage five required the researchers to reflect and review their analysis and findings. Stages two through five were completed together during research meetings. The researchers wrote field notes and memos to capture impressions, questions, and relevant discussions. Meaning units were identified collaboratively and uploaded into Dedoose version 9.0.62 (SocioCultural Research Consultants, LLC, 2021) for coding. A preliminary codebook was informed by first impressions from reading the full text and refined after identifying meaning units and further refined throughout the coding process.

To analyze the data pertaining to the secondary research question, researchers used a quantitative analysis of qualitative data approach. Historically, content analysis originated with the use of quantitative analysis of qualitative data as the predominant methodology (Hsieh & Shannon, 2005). As a result of selecting this method for the second research question, there was alignment of the methodological approaches through the overarching lens of QCA. Analysis of student writing looked at the use of Fink's (2013) taxons as headings in their reflections. The researchers counted the number of times the word "RTSS" came up under each taxon heading and reported the occurrences as percentages.

Trustworthiness

All three researchers completed the data analysis during research meetings. Consistent with the strategies articulated by Elo et al. (2014), the researchers evaluated their processes during each stage of analysis to ensure trustworthiness. Conflicts were resolved through discussion and all codes and themes were agreed upon by the research team. The audit trail included deidentified student writings, the evolution of code development, a code book, resolved memos, and notes on theme development.

Findings

The researchers reviewed the reflective writing from all students enrolled in the course (n=76). Using the STC methodology, 29 students' writings (38%) were reviewed in-depth for meaning units related to the study question. After coding 21 of 29 students' writings, no new codes emerged, and data saturation was achieved. Students were asked to reflect on their growth within the context of the learning outcomes which corresponded to Fink's Taxonomy of Significant Learning (Fink, 2013). Within the student reflections, two main themes were identified: *Growth takes Practice* and *The RTSS is a Bridge from Classroom to Practice*. Researchers conducted a secondary analysis of the data and found that students most often framed their RTSS discussion within Fink's *Learning How to Learn* and *Application* growth goals (see Table 1).

Table 1*RTSS Discussion within Fink's Taxon Growth Goals Reflection Content*

| Fink's Taxonomy of Significant Learning (2013) | Student Reflections- n (%) |
|---|-----------------------------------|
| Foundational Knowledge | 4 (13.7%) |
| Application | 11 (37.9%) |
| Integration | 3 (10.3%) |
| Human Dimension | 1 (3.4%) |
| Caring | 0 (0%) |
| Learning How to Learn | 10 (34.4%) |

Theme 1: Growth Takes Practice

Students repeatedly described the challenges they faced using the RTSS. The reflective writings acknowledged it was hard, however, the reflections also articulated their growth and change in thinking that occurred through practice. A student reflection shared that,

In the beginning of the semester, the RTSS chart was slightly overwhelming and confusing. I was unsure how it fit into the 'big picture' of occupational therapy. However, during our second or third lab it clicked for me and I was able to understand the benefits of using this chart. (Student 3)

Another wrote, "By filling out numerous RTSS charts, I have grown in my ability to integrate application when determining either which theory best supports an intervention or finding evidence-based practice that supports the chosen intervention" (Student 23). The clear benefits of the RTSS were described, though these only become apparent with practice. Another student summed up their experience, reflecting,

When I first wrote out an RTSS chart, I struggled greatly because it was a challenge for me to focus on certain, more pertinent client factors that needed to be addressed. However, as the semester went on, I felt as though the RTSS charts actually helped me organize my thinking and aided me in breaking down interventions along with writing goals. The RTSS charts overall helped me better understand the occupational therapy process and gave me a clear visual of how to break down a treatment session. (Student 27)

Students identified that over time and with repetition, using the RTSS was helpful in shaping their occupational therapy process.

Theme 2: The RTSS Is a Bridge from Classroom to Practice

Student writings wove together key elements of education and occupational therapy practice. The RTSS was described as a tool that allowed them to make connections with their previous learning and supported their ability to develop occupational therapy interventions. Using the RTSS allowed students to imagine themselves as occupational therapy practitioners. They envisioned using the RTSS as they moved from student to practitioner. Within this major theme are three subthemes: *The RTSS Provides a Structure for Learning, Deep Learning, and Best Practices in Occupational Therapy.*

Subtheme: The RTSS Provides a Structure for Learning

Students described the weekly RTSS assignment as providing a structure to facilitate their learning of how to plan occupational therapy interventions. One student reflected, “I believe this chart was a great tool to help me learn how to break down occupational therapy intervention approaches and my clinical reasoning to support my decisions” (Student 3). The RTSS also gave students a way to defend their reasoning. Students identified the value of this in supporting their use of theory in practice and articulating the value of an intervention approach and occupational therapy practice to clients, interdisciplinary team members, and payers. A student stated,

It is essential that we as OTs have scientific and peer-reviewed evidence to back up our interventions. Specifically, through the Letter of Medical Necessity and the RTSS chart, this class made me think about how I could prove the various interventions that I will be implementing with my patients and why that care is necessary for them. (Student 26)

Another student commented similarly, writing, “... the ability to explain why we do what we do, will allow me to practice in interprofessional teams and advocate for our profession and its unique value” (Student 8). The RTSS was framed by students as a tool to support informed dialogue within the context of occupational therapy practice.

Subtheme: Deep Learning

Students described the process of using the RTSS as connecting their previous course work to the intervention planning process and their future as occupational therapy practitioners. Students shared that the RTSS helped to understand the role of foundational coursework knowledge in planning intervention and the occupational therapy process. One student noted,

When learning about the many different theories last spring, I did not expect them to play a vital role when determining different interventions and treatment plans for clients. It was one thing to learn about them and have examples, but another thing to pick a theory on your own, align it with the client’s goals, and create an intervention based on that theory. (Student 19)

Another mentioned, “This is seen especially through the use of the RTSS chart, which incorporates aspects from various courses to culminate into our clinical reasoning in interventions” (Student 26). Students articulated that the RTSS broke down some of the learning silos that can exist across various courses.

Subtheme: Best Practices in Occupational Therapy

Occupational therapists strive to provide occupation-based care that is client-centered and grounded in evidence. Students articulated how the RTSS structured their thinking to develop treatment ideas that were meaningful, client-specific, and grounded in evidence. One student noted,

I also think the RTSS charts aided in the development of my integration skills. The integration objective includes connecting client factors and preferences with

appropriate intervention strategies to address the needs of the clients. These assignments allowed for me to think about the client in a holistic manner and include interventions that they would enjoy and meet their medical needs. (Student 24)

Moving from general evidenced-based intervention strategies to specific applications that are client-centered and occupation-based can be challenging. This transition was evident in student comments with one stating, “I had to challenge myself to not just make my best guess, but instead to really be intentional and analytical when making choices on how to intervene with clients” (Student 11). Another student shared, “My biggest area of growth regarding foundational knowledge was keeping occupation at the root of our interventions using the RTSS chart” (Student 21). The structure of the RTSS supported intentional decision-making to develop interventions aligned with best practices in occupational therapy.

Discussion

Reviews of the final course reflection revealed frequent unprompted discussions of the RTSS as being influential to the students’ growth. The repeated mention of the RTSS evoked the researchers’ interest to further explore the student reflections and better understand in what ways the RTSS impacted the students’ learning experience. The student perceptions of using the RTSS demonstrated that students described the use of the RTSS as challenging, yet supportive of their growth and a tool to support occupational therapy clinical practice. Within Fink’s taxons, students were most likely to connect the RTSS with *Application* and *Learning How to Learn* (see Table 1). These areas of taxonomy are aligned with the main themes identified in the analysis.

As a main theme of the study, *Growth Takes Practice* included reflections in which students described their early difficulty using the framework and the need for practice. This student experience is consistent with clinician experiences with the RTSS. In a survey of people who downloaded the RTSS manual from the ACRM website, 37% of respondents who did not ultimately use the RTSS reported major barriers to use as limited time and educational resources to learn and use the RTSS (Van Stan et al., 2023). The language of the RTSS is novel and does require repeated exposure and practice. For most experienced clinicians, making their thinking explicit is a novel and challenging process, independent of the RTSS framework (Lam Wai Shun, 2022). For entry-level occupational therapy students, this process is completely novel, so while using the RTSS framework takes practice, it is a valuable resource that can facilitate the important skill of intervention planning.

In the second theme of the study, *Building a Bridge from Classroom to Practice*, students often identified the RTSS as a “tool” used to give form and structure to the abstract process of clinical reasoning in occupational therapy practice. Described as a means for problem-solving, the RTSS helped students break down the complex task of intervention planning into more discrete components. For occupational therapy practitioners, the complex decision-making and planning that goes into designing treatments are mostly cognitive and implicit (Lam Wai Shun et al., 2022). Implicit

knowledge that occupational therapy practitioners use to guide their clinical reasoning and critical thinking needs to become explicit (Da Silva Araujo et al., 2022; Jette, 2020). Using the RTSS as an explicit strategy was recognized by students as a method that could be integrated across multiple contexts. Thus, using this framework supported the concept of learning how to learn within the ambiguity of client characteristics that require critical thinking within occupational therapy practice. Koenig (2012) noted the importance of integrating cognitive behaviors as a key component of facilitating sustained independent learning, akin to how the students used the RTSS as a strategy to support their learning. With this overt understanding, students can then connect their didactic learning to the occupational therapy process.

Learning tools can provide a structure for thinking and learning. Having the RTSS as a tool in their proverbial toolbox, the students also emphasized a sense of empowerment in being able to better describe their intervention choices. Students and occupational therapy practitioners have found it difficult to articulate the complexity and breadth of the profession's domain and process (Kramer et al., 2020). The RTSS had been selected for the course as a means to structure student articulation of rationale. Before the integration of the RTSS, the instructor's experience was that student assignments demonstrated creativity in their approach but often lacked a sound basis for intervention choices. In the described course, students reported that they could use the RTSS to communicate their process and rationale for selecting a particular intervention while substantiating their approach with theory or evidence. Their reflections shared enhanced confidence for advocacy and interprofessional collaboration by using the RTSS as a framework to highlight occupational therapy's distinct value. As a result, there is a potential to create practitioners who are more adept at promoting the fidelity of occupational therapy service delivery as well as the means to research its effectiveness.

The process of articulating what therapists do and why they do it is central to practice. With experience, expert clinicians incorporate this thinking fluidly using knowledge, reasoning, and reflection (Wainwright et al., 2010). Students with limited skills may benefit from explicit frameworks to organize their thinking and promote their ability to articulate their current understanding of theories and actions that guide their practice. The concepts and rules that guide treatment specifications using the RTSS encourage clear thinking about the purpose of interventions and the actions needed to bring about desired changes in function. Clear thinking about a treatment target guides the selection of outcome measures that can best capture the changes prescribed by the treatment theory. Using appropriate outcome measures guides decisions about a treatment's effectiveness and may contribute to a planned progression of the treatment (Whyte et al., 2021). The RTSS can support critical thinking and clinical reasoning by highlighting the relationship between the treatment ingredients selected by the clinician and the functional changes that are desired. Having a clear mechanism to articulate this process can strengthen the profession as a whole and further emphasize occupational therapy's distinct value.

Limitations and Future Research

As a retrospective analysis, this work has several limitations. Data were gathered from a single source of reflective writings and not confirmed through alternate sources or member checking. All writings were obtained from a single course focused on interventions for physical disabilities across the lifespan in a single education program. Using a small sample posed some concerns for trustworthiness, although researchers did employ measures to mitigate this. These limitations present opportunities for future research to empirically evaluate the effectiveness of using the RTSS as a strategy to support clinical reasoning in entry-level occupational therapy education.

Implications for Occupational Therapy Education

The results of this work support the use of the RTSS in occupational therapy education as a framework to develop critical thinking for intervention planning. The RTSS takes practice to use effectively, suggesting the RTSS could be most beneficial when embedded across a curriculum rather than a single course, as is presented in this paper. This assertion is consistent with the recommendation of Pitonyak et al. (2020), who emphasized the importance of intentionally integrating critical thinking throughout an occupational therapy curriculum. Based on the positive perceptions of students, there may be value in exploring opportunities to provide earlier learning experiences around the RTSS in a curricular course sequence. Providing opportunities to scaffold learning may enhance the student learning experience and promote the integration of the framework into future intervention planning and delivery. For educators who are aware of the RTSS, the most commonly reported barriers to integration into coursework are the complexity of the framework and the need for additional resources to learn and implement the RTSS (Van Stan et al., 2023; Van Stan et al., 2019). Educators interested in learning more about the RTSS are encouraged to review resources developed by the ACRM's RTSS networking group, including a video presentation on the RTSS (Lin et al., 2021). The networking group can be found by accessing the following link: <https://acrm.org/acrm-communities/rehabilitation-treatment-specification/>. This networking group includes a curriculum task force that aims to develop resources to support implementation into rehabilitation therapy curriculums.

Conclusion

The purpose of this paper was to explore occupational therapy student perceptions of their experience using the RTSS in an intentionally designed intervention course. Analysis of student reflections at the end of the course revealed that the RTSS added value to their learning and perceived improved confidence for Level II fieldwork and occupational therapy practice readiness. These findings support the possible benefits of integrating this framework into occupational therapy curricula as a means to help students further develop critical thinking and clinical reasoning skills. Providing opportunities to scaffold learning may enhance the student's learning experience and integration of the framework into future intervention planning and delivery. Providing students with a resource to articulate their intervention rationale can empower them to develop into effective, evidence-based occupational therapy practitioners to propel the profession into the future.

References

- Accreditation Council for Occupational Therapy Education (ACOTE®) (2018). 2018 Accreditation Council for Occupational Therapy Education (ACOTE®) standards and interpretive guide (effective July 31, 2020). *American Journal of Occupational Therapy*, 72(Supplement_2), 7212410005p1–7212410005p83. <https://doi.org/10.5014/ajot.2018.72S217>
- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's Taxonomy of educational objectives* (Complete ed.). Longman.
- Branzetti, J., Gisondi, M. A., Hopson, L. R., & Regan, R. (2019). Aiming beyond competent: The application of the taxonomy of significant learning to medical education. *Teaching and Learning in Medicine*, 31(4), 466-478. <https://doi.org/10.1080/10401334.2018.1561368>
- Da Silva Araujo, A., Kinsella, E. A., Thomas, A., Gomes, L. D., & Marcolino, T. Q. (2022). Clinical reasoning in occupational therapy practice: A scoping review of qualitative and conceptual peer-reviewed literature. *American Journal of Occupational Therapy*, 76(3), 1-11. <https://doi.org/10.5014/ajot.2022.048074>
- Dijkers, M. P. (2019). An end to the black box of rehabilitation? *Archives of Physical Medicine and Rehabilitation*, 100(1), 144-145. <https://doi.org/10.1016/j.apmr.2018.09.108>
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open*, 4(1), 1-10. <https://doi.org/10.1177/2158244014522633>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, 62(1), 107-115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Fallah, C. R. (2008). Redesign of a life span development course using Fink's Taxonomy. *Teaching of Psychology*, 35(3), 169–175. <https://doi.org/10.1080/00986280802289906>
- Fasoli, S. E., Ferraro, M. K., & Lin, S. H. (2019). Occupational therapy can benefit from an interprofessional rehabilitation treatment specification system. *American Journal of Occupational Therapy*, 73(2), 7302347010p1-7302347010p6. <https://doi.org/10.5014/ajot.2019.030189>
- Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses*. Jossey-Bass.
- Gateley, C., & Borchering, S. (2016). *Documentation manual for occupational therapy: Writing SOAP notes* (4th ed.). SLACK Incorporated.
- Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Duquesne University Press.
- Hart, T., Dijkers, M., Whyte, J., Turkstra, L., Zanca, J., Packel, A., Van Stan, J. H., Ferraro, M., & Chen, C. (2019). A theory-driven system for the specification of rehabilitation treatments. *Archives of Physical Medicine and Rehabilitation*, 100(1), 172-180. <https://doi.org/10.1016/j.apmr.2018.09.109>
- Hart, T., Whyte, J., Dijkers, M., Packel, A., Turkstra, L., Zanca, J., Ferraro, M., Chen, C., & Van Stan, J. (2018). *Manual for rehabilitation treatment specification* (version 6.2). Moss Rehabilitation Research Institute. <https://mrri.org/innovations/manual-for-rehabilitation-treatment-specification/>

- Hildebrand, M. W., Host, H. H., Binder, E. F., Carpenter, B., Freedland, K. E., Morrow-Howell, N., Baum, C. M., Doré, P., & Lenze, E. J. (2012). Measuring treatment fidelity in a rehabilitation intervention study. *American Journal of Physical Medicine and Rehabilitation*, 91(8), 715-724. <https://doi.org/10.1097/PHM.0b013e31824ad462>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Jette, A. M. (2020). Opening the black box of rehabilitation interventions. *Physical Therapy*, 100(6), 883-884. <https://doi.org/10.1093/ptj/pzaa078>
- Keith, R. A. (1997). Treatment strength in rehabilitation. *Archives of Physical Medicine and Rehabilitation*, 78(12), 1298-1304. [https://doi.org/10.1016/S0003-9993\(97\)90300-2](https://doi.org/10.1016/S0003-9993(97)90300-2)
- Knowles, M. S., Holton, E. F., III., Swanson, R. A., & Robinson, P. A. (2020). *The adult learner: The definitive classic in adult education and human resource development* (9th ed.). Routledge/Taylor & Francis Group. <https://doi.org/10.4324/9780429299612>
- Koenig, R. (2012). *Learning for keeps: Teaching the strategies essential for creating independent learners*. Association for Supervision and Curriculum Development.
- Kramer, P., Hinojosa, J., Howe, T., & Benham, S. (2020). Domain of concern of occupational therapy: Relevance to pediatric practice. In P. Kramer, J. Hinojosa, & T. Howe (Eds.), *Frames of reference for pediatric occupational therapy* (4th ed., pp. 29-48). Wolters Kluwer.
- Lam Wai Shun, P., Swaine, B., & Bottari, C. (2022). Clinical reasoning underlying acute care occupational therapists' assessment of rehabilitation potential after stroke or brain injury: A constructivist grounded theory study. *Australian Occupational Therapy Journal*, 69(2), 177-189. <https://doi.org/10.1111/1440-1630.12781>
- Lin, S., Fasoli, S., Pinto, S., & Katz, L. (2021, February). *Introduction to the Rehabilitation Treatment Specification System: Defining rehab treatments systematically* [webinar]. American Congress of Rehabilitation Medicine. <https://youtu.be/STqan9Zra6I>
- Malterud, K. (2012). Systematic text condensation: A strategy for qualitative analysis. *Scandinavian Journal of Public Health*, 40(8), 795–805. <https://doi.org/10.1177/1403494812465030>
- Morgan, D. L. (1993). Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research*, 3(1), 112-121. <https://doi.org/10.1177/104973239300300107>
- Ness, B. M., O'Neil-Pirozzi, T., & Meulenbroek, P. (2021). Three speech-language pathology graduate programs, one model: Using systematic instruction to develop students' clinical decision-making skills. *Teaching and Learning in Communication Sciences & Disorders*, 5(1), 1-15. <https://doi.org/10.30707/TLCSD5.1.1624982519.497197>
- Pitonyak, J. S., Nielsen, S., O'Brien, S. P., Corsilles-Sy, C., Lambert, D. O., & Jaffe, L. E. (2020). Critical thinking in occupational therapy education: A systematic mapping review. *Journal of Occupational Therapy Education*, 4(4), 1-28. <https://doi.org/10.26681/jote.2020.040403>
- Portney, L. G. (2020). *Foundations of clinical research: Applications to evidence-based practice* (4th ed.). F.A. Davis.
- Schell, B., & Schell, J. (2017). *Clinical and professional reasoning in occupational therapy* (2nd ed.). Wolters Kluwer.
- Schreier, M. (2012). *Qualitative content analysis in practice*. SAGE Publications, Inc.

- Shelley, A. W. (2020). Reverse Bloom: A new hybrid approach to experiential learning for a new world. *Journal of Education, Innovation and Communication*, 2(2), 30-45. <https://doi.org/10.34097/jeicom-2-2-Dec2020-2>
- SocioCultural Research Consultants, LLC. (2021). *Dedoose Version 9.0.62: Web application for managing, analyzing, and presenting qualitative and mixed method research data* [Internet]. <http://dedoose.com>
- Sweetman, M. M. (2018). A qualitative exploration of transformative learning within an online leadership course. *Journal of Occupational Therapy Education*, 2(2), 1-23. <https://doi.org/10.26681/jote.2018.020206>
- Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative Social Work*, 11(1), 80–96. <https://doi.org/10.1177/1473325010368316>
- Van Stan, J. H., Dijkers, M. P., Whyte, J., Hart, T., Turkstra, L. S., Zanca, J. M., & Chen, C. (2019). The Rehabilitation Treatment Specification System: Implications for improvements in research design, reporting, replication, and synthesis. *Archives of Physical Medicine and Rehabilitation*, 100(1), 146-155. <https://doi.org/10.1016/j.apmr.2018.09.112>
- Van Stan, J. H., Holmes, J., Wengerd, L., Juckett, L. A., Whyte, J., Pinto, S. M., Katz, L. W., & Wolfberg, J. (2023). Rehabilitation Treatment Specification System: Identify barriers, facilitators, and strategies for implementation in research, education, and clinical care. *Archives of Physical Medicine and Rehabilitation*, 104(4), 562-568. <https://doi.org/10.1016/j.apmr.2022.09.021>
- Wainwright, S. F., Shepard, K. F., Harman, L. B., & Stephens, J. (2010). Novice and experienced physical therapist clinicians: A comparison of how reflection is used to inform the clinical decision-making process. *Physical Therapy*, 90(1), 75-88. <https://doi.org/10.2522/ptj.20090077>
- Whyte, J., Dijkers, M. P., Fasoli, S. E., Ferraro, M., Katz, L.W., Norton, S., Parent, E., Pinto, S. M., Sisto, S. A., Van Stan, J. H., & Wengerd, L. (2021). Recommendations for reporting on rehabilitation outcomes. *American Journal of Physical Medicine & Rehabilitation*, 100(1), 5-16. <https://doi.org/10.1097/PHM.0000000000001581>
- Whyte, J., Dijkers, M. P., Hart, T., Van Stan, J. H., Packel, A., Turkstra, L. S., Zanca, J. M., Chen, C., & Ferraro, M. (2019). The importance of voluntary behavior in rehabilitation treatment and outcomes. *Archives of Physical Medicine and Rehabilitation*, 100(1), 156-163. <https://doi.org/10.1016/j.apmr.2018.09.111>
- Whyte, J.D., Dijkers, M.P., Fasoli, S.E., Ferraro, M., Katz, L.W., Norton, S., Parent, E., Pinto, S.M., Sisto, S.A., Van Stan, J.H., & Wengerd, L. (2021). Recommendations for reporting on rehabilitation outcomes. *American Journal of Physical Medicine & Rehabilitation*, 100(1), 5-16. <https://doi.org/10.1097/PHM.0000000000001581>
- Zanca, J. M., Turkstra, L. S., Chen, C. Packel, A., Ferraro, M., Hart, T., Van Stan, J. H., Whyte, J., & Dijkers, M. P. (2019). Advancing rehabilitation practice through improved specification of interventions. *Archives of Physical Medicine and Rehabilitation*, 100(1), 164-171. <https://doi.org/10.1016/j.apmr.2018.09.110>

Appendix A

| Rehabilitation Treatment Specification System (RTSS) | |
|---|--|
| Goal Write out the goal in COAST format (Client, Occupation, Assist Level, Specificity, Time; Gateley & Borcharding, 2016). | |
| Activity What is the occupation or activity you will do with the client to address the goal? | |
| Treatment Component Often an activity that you may think of as a single “treatment” consists of multiple treatments | |
| Target– Identify only <u>ONE</u> thing Specific aspect of client functioning to be changed – <i>must be measurable!</i> What are you DIRECTLY trying to change with the intervention that you are applying? | |
| Treatment Groups Identify which group your intervention falls under: <ul style="list-style-type: none"> • <u>Organ Functions</u> <ul style="list-style-type: none"> ○ Changes in organs or organ systems • <u>Skills & Habits</u> <ul style="list-style-type: none"> ○ Almost infinite set of performances ○ Anything that is improved by practice • <u>Representations</u> - Changes in cognitive & affective representations <ul style="list-style-type: none"> ○ Knowledge, beliefs, attitude, motivation ○ Targets that are changed through information processing | |
| Ingredients Specific modalities, medications, devices, or <i>practitioner</i> actions chosen to bring about change | |
| Dosing How often, how many times within the session | |

| | |
|--|--|
| <p>Mechanism(s) of Action (MOA) The known or hypothesized causal chain linking ingredients to the changes in the target i.e. how the ingredients work. <i>You will need to provide one peer-reviewed reference or link to frame of reference to support this.</i></p> | |
| <p>Upgrades & Downgrades List one upgrade to the activity and one downgrade specific to the target.</p> | |