

# DOES THE USE OF MULTIFACTORIAL TRAINING METHODS INCREASE PRACTITIONERS' COMPETENCE?

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## ABSTRACT

*Skilled therapy practitioners are required by their governing associations to seek professional development per licensure requirements. These requirements facilitate clinical reasoning and confidence during patient care. There are limited online professional development workshops, especially ones that offer multifactorial training as an educational strategy to increase confidence in applying evidence-based clinical skills. To address this, a six-week online initiative was conducted to train practitioners using multifactorial training methods (visual, auditory, and kinesthetic teaching techniques). The objective was to show that multifactorial online training increases a practitioner's clinical competence, which facilitates application of effective interventions. Outcomes revealed that once practitioners were provided online multifactorial training methods, they became more confident when applying an evidence-based intervention. The online components of the training enhanced the outcomes of practitioner competency and confidence because the format allowed participants to work at their own pace, review audio and video training units, and reference information as many times as suited their learning style. The fact that the training was always accessible through the online platform made learning client-centered and convenient for working practitioners. As practitioners experienced diverse online training strategies, they began to identify preferred learning techniques based on their specific learning style. Overall, this project showed that online multifactorial training methods are an effective strategy to increase practitioner's knowledge, which positively impacts practitioner's confidence and clinical competence.*

*Keywords: multifactorial learning, confidence, education, professional development, online training.*

## INTRODUCTION

### *Background*

According to the Centers for Disease Control and Prevention, competencies are defined as essential knowledge, skills, and abilities that are critical for effective and efficient performance of work (Ned-Sykes, Johnson, Ridderhof, Perlman, Pollock, and DeBoy, 2015). Research shows that practitioners must be knowledgeable and use

quality information when generating skilled therapy services (AOTA, 2014). Within the field of occupational therapy (OT), it is important to provide education to practitioners to increase their confidence in using therapeutic interventions that reflect clinical competence. Educating practitioners with high quality, relevant instruction has proven to increase clinical competence and promote professional viability (Chase, Mann, Wasek, &

Arbesman, 2012; Hofmann, 2016). This sets a precedent for improving practitioners' confidence and competence in using evidence-based practice techniques to meet the objectives of the Centennial Vision (Corcoran, 2007).

Often, patients and families seek the assistance of skilled practitioners to provide therapeutic interventions in the most effective ways. Due to limited resources, practitioners express reluctance to incorporate evidence-based therapeutic interventions due to limited training (Hofmann, 2016). Further, practitioners express reluctance in implementing these resources due to a lack of confidence and experience with incorporating therapeutic techniques (Anemaet, Moffa-Trotter, 1999; Halvarsson, Franzen, & Stahle, 2015).

When practitioners are educated through a variety of learning strategies, such as visual, verbal, and kinesthetic training (multifactorial), they begin to organize, conceptualize, and understand information more effectively (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010; Halvarsson et al., 2015; King, Wright, & Russel, 2011; Salls, Dolhi, Silverman, & Hansen, 2009). Current literature reveals that providing practitioners with the correct combination of multifactorial inputs facilitates the learning experience to enhance professional development (Salls et al., 2009). As clinicians' confidence and competence improves, the services they provide become more evidence-based.

Applying the concepts of multifactorial training to a popular treatment technique such as Proprioceptive Neuromuscular Facilitation (PNF) implies that clinicians could receive more effective training with this method than by using traditional training methods that do not consider the elements of multifactorial lessons. This project was designed to examine whether multifactorial online training could increase a practitioner's clinical competence, which would in turn facilitate correct application of PNF techniques.

## **METHOD**

### *Research Design*

Pre- and postsurveys were used to answer the question: Does the use of multifactorial training methods increase practitioner's competence?

### *Participants*

After obtaining Institutional Review Board

Approval, participants were recruited via an informational recruitment flyer, which outlined inclusion criteria and gave a general explanation of project activities. The flyer was distributed via e-mail to OT practitioners who were located throughout Mississippi. The initial e-mail included an invitation to participate in the evidence based project. This letter emphasized that participation in this project was voluntary and would in no way affect the practitioner's job status. Those practitioners who expressed interest in the project received a verification form via e-mail. The verification form, constructed by the principal investigator, was filled out by the participants to ensure that the inclusion criteria of the project were met. The participant verification form asked:

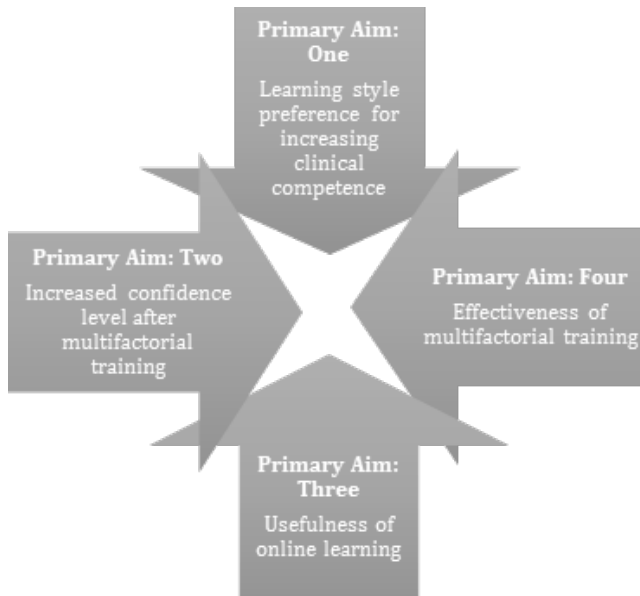
- Are you a full-time (32 hours/ week or more) OT practitioner?
- Do you work in a setting with community-dwelling adults?
- Do you have computer and internet access?
- Are you interested in professional development?

Practitioners were included if they: worked full-time (32 hours/week or more) as an occupational therapist or occupational therapy assistant in a Skilled Nursing Facility (SNF) or setting with community-dwelling adults; had access to a computer with the relevant software and the Internet (e.g., YouTube, Google documents, Survey Monkey, Power-point, Microsoft Word, and Adobe PDF Reader); had access to a printer and fax and/or scanner for submission of informed consent; were available to participate in the six-week project; were proficient in reading, writing, and communicating in English; could fill out the signed informed consent; and had an interest in professional development.

Practitioners were excluded if they were: non-OT professionals; working less than 32 hours/week; employed as part of a managerial staff; retired occupational therapy practitioners; occupational therapy and/or occupational therapy assistant students; not proficient with the English language; not able to access a computer or the Internet; were not able to commit to the six-week project timeframe; and did not sign the letter of consent by September 4, 2016.

Figure 1: Primary Aims

Illustration of the four objectives explored throughout the project



Practitioners who met the inclusion criteria of this project received a blind carbon-copied e-mail instructing them to print and sign the informed consent and return it to this principal investigator via fax, scanning, and/or e-mailing. After signing the informed consent form, practitioners received a follow-up e-mail from the principal investigator verifying acceptance into this project.

*Data Collection*

Seventeen practitioners met the inclusion criteria and provided formal consent for the project. Data was collected through a pre- and postsurvey using a Likert scale format delivered by the electronic online survey instrument Survey Monkey. The pre- and postsurvey was specially designed by

this author and included both quantitative and qualitative questions.

**RESULTS**

*Quantitative Results*

Through the pre- and postsurvey measures, four primary aims were identified. Each aim related to a way to provide practitioners with different ways to learn and use multifactorial training. (See Figure 1.)

Based on the results of the pre- and postsurvey, three multifactorial educational learning styles were identified by practitioners. (See Figure 2.)

Participants were asked to provide pre- and postsurvey perceptions of the effectiveness of using multifactorial education and its ability to increase their competence in effectively incorporating the intervention into their daily practice. (See Figure 3. and Figure 4.)

*Qualitative Outcomes*

An analysis of the postsurvey indicated themes such as usefulness of online learning, effectiveness of multifactorial training, and appropriateness of evidence-based techniques, such as PNF techniques.

*Effectiveness of Multifactorial Training*

All practitioners that participated in the project expressed the value of being educated through the online multifactorial teaching method. The participants identified greater understanding of the therapeutic interventions and techniques as a result of having information presented to him or her in various ways. As many participants stated, “I am now more confident,” “Now it makes sense,” and “I did not know visual demonstrations were such

Figure 2: Learning Style Preference for Increasing Clinical Competence

Illustration of a comparison of participants' preference for multifactorial learning methods based on pre- and post survey responses from practitioners

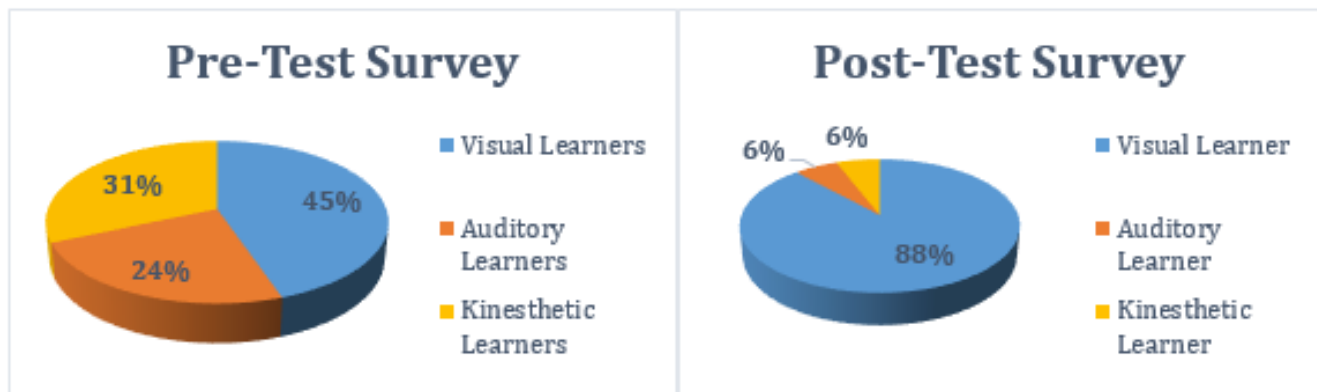
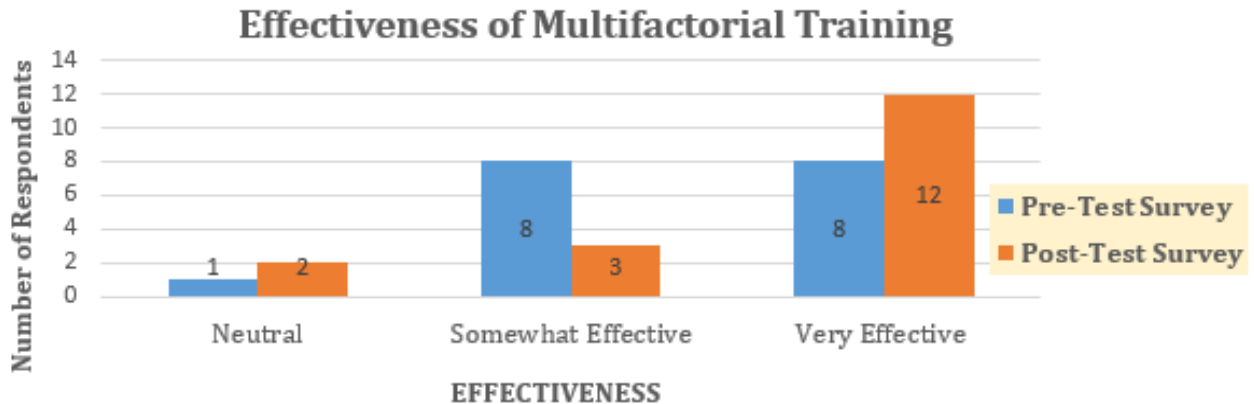


Figure 3: Effectiveness of Multifactorial Training

Illustration of how OT practitioners reported the effectiveness of multifactorial training as a useful tool to increase their competence using a proven therapeutic intervention



an important educational component needed to enhance my comprehension of information.” The practitioners reported a greater understanding of how and when to incorporate the skills as a result of the holistic online training. The multifactorial training, administered through an online platform, provided practitioners with diverse learning experiences that addressed individual needs.

#### *Usefulness of Online Learning*

Twelve practitioners expressed the usefulness of online learning. Each practitioner objectified specific rationales as to how their level of comfort increased as a direct result of using the online format. Several reported an increased learning experience partially due to increased flexibility during the week to complete the training modules at their leisure. Others expressed the comforting factors associated with online learning, such as learning at their own pace. The practitioners identified the value of having the training modules accessible for review in case a refresher was needed. Many practitioners highlighted the ease of participating in an online professional development workshop, stating “It did not feel like a hassle,” “I could review through the material, while doing home tasks,” and “I was able to relax at home while reviewing the information.”

#### *Plans to Incorporate Evidence-Based Practice*

Fifteen practitioners indicated increased confidence with incorporating evidence-based practice (EBP) techniques postintervention. Numerous practitioners expressed confidence in incorporating EBP concepts into their daily clinical

practice. Several stated, “If I had more relaxed training courses, I would feel more comfortable while learning other EBP techniques,” “I will incorporate other EBP techniques if trained using multifactorial methods,” and “If I can find more EBP courses that are flexible, I will incorporate more.” (See Figure 5.)

#### **DISCUSSION**

Most of the participants (15/17) reported that online multifactorial training was an effective method to increase their level of confidence. The online components of the training enhanced the outcomes of practitioner competency and confidence because the format allowed participants to work at their own pace, review audio and video training units, and reference information as many times as suited their learning style. The fact that the training was diverse and continuously accessible through the online platform ensured a fully client-centered approach to learning.

Ambrose and colleagues (2010) define multifactorial learning strategies as a way to deconstruct concepts, which helps learners combine and integrate skills to develop greater automaticity and fluency during daily practice. The project aligns with earlier data supporting the incorporation of multifactorial training methods in online training presentations (Ambrose et al., 2010; Dunbar & Winston, 2015; Hofmann, 2016; McCrow, Yevchak, & Lewis, 2014). The project demonstrated that combining various forms of sensory inputs—visual (pictures/demonstrations), verbal (auditory), and physical (kinesthetic)—with

logical reasoning could be achieved through using an online platform. Addressing various learning styles in a continuously available, flexible format met participant's learning needs and improved the learning experience. Congruent with Andreou and colleagues (2014) the online learning platform allowed an integration of the learning experience, which aided in improving clinical-reasoning, judgment-making, decision-making, and problem-solving skills by intertwining various concepts to improve the delivery of the training,

At the conclusion of the project, practitioners began to distinguish specific learning styles best suited to increase their understanding of the education provided throughout the project. These findings indicate that incorporating diverse training methods was an effective approach during the online learning experience. Most (12/17) practitioners perceived that they benefitted from all three learning styles. Many (11/17) practitioners identified a combination of visual learning and reflective learning as the most effective technique to increase their learning experience.

Salls et al. (2009) suggest that after receiving adequate training, practitioners' competence in implementing necessary skills into clinical practice surges. This project showed similar findings. These results show that multifactorial training was a helpful and valuable training strategy in relearning skills. As noted within the literature, continued competence is a dynamic, multidimensional process in which the practitioner expands upon his or her knowledge (Cole, 2013; Cusick & McCluskey, 2000). Interestingly, many practitioners reported

an increased likelihood to incorporate skills when trained using multifactorial methods.

Providing practitioners with variations ways to learn information increases practitioners' confidence and competence while using this dynamic therapeutic intervention (Sato & Maruyama, 2009; Schultz-Krohn, Royeen, McCormack, Pope-Davis, & Jourdans, 2012). Specifically, after being provided with multifactorial training using an online format, practitioners indicated an increased understanding of when and how to incorporate the therapeutic intervention into their clinical practice.

#### Clinical Implications

Due to the success of this project, future online trainings should be expanded to integrate live online training videos into the structure of their lessons. This would allow learners who benefit from even more diverse multifactorial training to have access to an educational method that targets their learning style.

Training should include online surveys that help learners identify their learning style. Matching learning style to type of teaching would improve a learner's ability to select continuing education courses suitable for their learning needs.

Since online training has proven to be a valuable and effective learning tool, expanding online course options for practitioners is strongly recommended. Including live instruction, audio, video, and text options is recommended to diversify instruction. Allowing open access to videos is also recommended so practitioners can learn at their own pace and repeat units as needed.

The results of this project would be useful to

Figure 4: Perceived Competence After Multifactorial Training

Illustration comparing participants perceived competence before and after being educated using multifactorial training

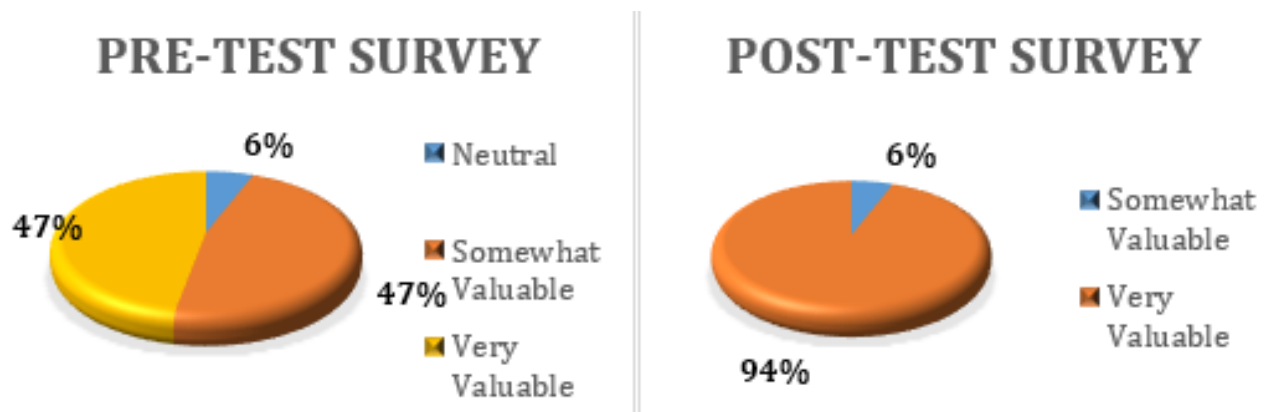
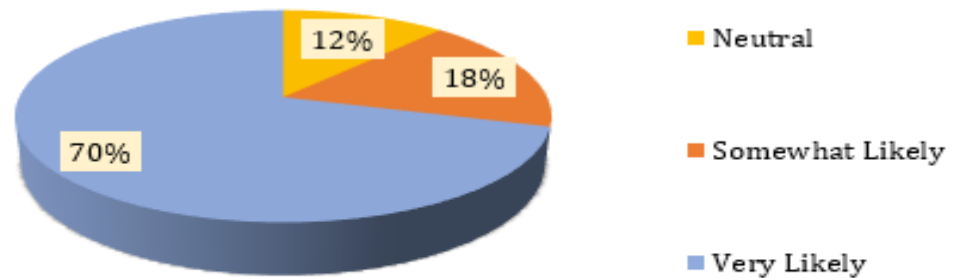


Figure 5: Likelihood to Incorporate EBP if Trained Using Multifactorial Methods

Illustration of participants expressing their likelihood to incorporate EBP skills if they are trained using multifactorial training methods

## Likelihood to Incorporate EBP if Trained using Multifactorial Methods



discuss at local, state, national, and international associations conferences. Providing information would raise awareness about different learning styles and methods to address each learner's unique needs. This could impact educational efforts in the area of "peer-to-peer" interactions to foster further discussions and allow more collaboration.

### *Limitations*

This project measured the perceptions of working practitioners, which may not represent perceptions amongst other practitioners. The number of participants was only seventeen, thus results may not be generalizable. The measurement tool was constructed specifically for this project and was not normed or standardized.

### **CONCLUSION**

Integrating multifactorial training using an online learning format was an effective strategy to increase practitioner's knowledge. By combining various strategies using a convenient and efficient learning platform, the likelihood of practitioners to seek training increased tremendously. The ease and convenience of the learning experience positively impacted the perceived level of confidence and clinical competence of the practitioners. As practitioners were presented with diverse online methods of education, their level of understanding increased, which positively impacted competence.

Incorporating multifactorial training was a valuable teaching method used to address the unique needs of practitioners as they attempted to learn information.

## REFERENCES

- Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: Jossey-Bass.
- American Occupational Therapy Association. [AOTA]. (2014). *Occupational therapy practice framework: Domain and process* (3rd ed.). *American Journal of Occupational Therapy*, 68(Suppl. 1), S1–S48. doi:10.5014/ajot.2014.682006
- Anemaet, W., & Moffa-Trotter, M. (1999). Functional tools for assessing balance and gait impairments. *Topics in Geriatric Rehabilitation*, 15(1), 66–83.
- Andreou, C., Papastavrou, E., & Merkouris, A. (2014). Learning styles and critical thinking relationship in baccalaureate nursing education: A systematic review. *Nursing Education Today*, 34, 362–371. doi:10.1016/j.nedt.2013.06.004
- Chase, A. C., Mann, K., Wasek, S., & Arbesman, M. (2012). Systematic review of the effect of home modification and fall prevention programs on falls and the performance of community-dwelling older adults. *American Journal of Occupational Therapy*, 66(3), 284–290. doi:10.5014/ajot.2012.005017
- Cole, M. B. (2013). *Group dynamics in occupational therapy: The theoretical basis and practice application of group intervention* (4th ed.). Thorofare, NJ: Slack Incorporated.
- Corcoran, M. (2007). AOTA's centennial vision and executive summary. *American Journal of Occupational Therapy*, 61(6), 267–268. doi:10.5014/ajot.61.3.267
- Cusick, A., & McCluskey, A. (2000). Becoming an evidence-based practitioner through professional development. *Australian Occupational Therapy Journal*, 47, 159–170. doi:10.1046/j.1440-1630.2000.00241.x
- Dunbar, S. B., & Winston, K. (2015). *An occupational perspective on leadership: Theoretical and practical dimensions* (2nd ed.). Thorofare, NJ: Slack Incorporated.
- Halvarsson, A., Frazen, E., & Stahle, A. (2015). Balance training with multi-task exercises improves fall-related self-efficacy, gait, balance performance and physical function in older adults with osteoporosis: A randomized controlled trial. *Clinical Rehabilitation*, 29(4), 365–375. doi:10.1177/0269215514544983
- Hofmann, A. O. (2016). Preventing falls with occupational therapy. *American Journal of Occupational Therapy*, 1, 1–3. Retrieved January 18, 2016 from <http://www.aota.org/about-occupational-therapy/professionals/pa/articles/fall-prevntion.aspx>
- King, G., Wright, V., & Russel, D. J. (2011). Understanding pediatric rehabilitation therapists' lack of use of outcome measures. *Disability and Rehabilitation*, 33(2526), 2662–2671. doi:10.3109/09638288.2011.582924
- McCrow, J., Yevchak, A., & Lewis, P. (2014). A prospective cohort study examining the preferred learning styles of acute care registered nurses. *Nurse Education in Practice*, 14, 170–175. doi:10.1016/j.nepr.2013.08.019
- Ned-Sykes, R., Johnson, C., Ridderhof, J. C., Perlman, E., Pollock, A., & DeBoy, J. M. (2015). Competency guidelines for public health laboratory professionals: CDC and the association of public health laboratories. *Morbidity and Mortality Weekly Report*, (64)1. Atlanta, GA: Centers for Disease Control and Prevention [CDC]. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/su6401a1.htm>
- Salls, J., Dolhi, C., Silverman, L., & Hansen, M. (2009). The use of evidence-based practice by occupational therapists. *Occupational Therapy in Health Care*, 23(2), 134–145. doi:10.1080/07380570927773305
- Sato, H., & Maruyama, H. (2009). The effects of indirect treatment of proprioceptive neuromuscular facilitation. *Journal of Physical Therapy Science*, 21(2), 189–193. doi:10.1589/jpts.21.189
- Schutz-Krohn, W., Royeen, B. C., McCormack, G., Pope-Davis, S., & Jourdan, J. M. (2006). Traditional sensorimotor approaches to intervention. In L. W. Pedretti, H. M. Pendleton, & W. Schulz-Krohn (Eds.) *Pedretti's occupational therapy: Practice skills for physical dysfunction*. (6th ed.) (pp. 726–768). St. Louis, MO: Mosby/Elsevier.