

Portfolios as a Master’s Degree Capstone Project

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Abstract

This poster describes the implementation of portfolios as a capstone project for master’s students in speech-language pathology (SLP) at a regional comprehensive university. Students are required to develop a portfolio that demonstrates entry-level competence across the scope of practice in SLP. Students collect artifacts from coursework and clinical placements that represent seminal learning experiences in each of ASHA’s Big 9 areas. They then write essays in which they reflect on their growth and competence in each area. Procedures for supporting students’ development of portfolios and evaluating the capstone project are described.

Introduction

Master’s students in speech-language pathology (SLP) at Western Carolina University (WCU) are required to develop a portfolio that demonstrates entry-level competence across the scope of practice in SLP. This portfolio serves as a capstone in which students reflect on and continue to develop the knowledge and skills they have gained throughout their program.

Portfolios/eportfolios (we use the terms interchangeably) are recognized as a high-impact practice (HIP) by the American Association of Colleges and Universities (Kuh, 2008). Portfolios have been described as a “meta” (Watson, Kuh, Rhodes, Light, & Chen, 2016) and “unifying” (Hubert, Pickavance,& Hyberger, 2015) HIP, in that portfolios incorporate and integrate other HIPs, such as writing-intensive courses, community-based learning, internships, and capstone experiences.

Portfolios are widely used in allied health and related educational programs. Nursing and medical programs were the first to utilize portfolios in their curricula and have served as a model for other allied health programs (Byrne, Schroter, Carter & Mower, 1994; Gallagher, 2001; Grugel, Miller, & Smith, 2011; Jensen & Saylor, 1994; Tochel et al., 2009). Programs in pharmacy (Lee, Kinsella, Oliver, Von Konsky, & Parsons, 2010), athletic training (Hannam, 1995), physical therapy (Barlow, Hanks & Tate, 2018), social work (Matthews, Simpson, Saunders, Hunt & Becken, 2016), occupational therapy (Vachon et al., 2016), nutrition (Anderson, Connolly, & Sadovnikova, 2017), health education (Thompson & Bybee, 2004), special education (Conderman, 2003), and SLP (Strampel & Lewis, 2016) have incorporated portfolios into program requirements. Portfolios are successful in assessing both student development and competence (Byrne et al., 1994; Jensen & Saylor, 1994; Plaza, Draugalis, Slack, Skrepneck, & Sauer, 2007).

Capstone Course

In their final semester, students are enrolled in a Capstone course. To prepare for the portfolio project, students reviewed each of the Big 9 areas, engaged in reflection activities, and completed peer reviews of portfolio entries. To facilitate review of the Big 9 areas, student teams were randomly assigned one of the Big 9 areas. Each team presented a review of their area and identified key additional review resources for their classmates. The instructor adapted and implemented a variety of activities to facilitate students' reflection on their knowledge, skills, and growth in each Big 9 area. Activities included Five Rs for Reflection: Recall, Recapture, Relate, Rationalize, Redirect (Bain et al., 2002); concept mapping; and reflective interviewing. Students completed peer reviews of portfolio entries, using guidelines designed by Hirsh (2011) and Cengage (2016).

WCU’s Implementation of Portfolios

Outside of class time, students created their portfolios. Portfolios contained artifacts and reflection essays that were organized according to ASHA’s Big 9 areas. One to two artifacts were expected in each of the Big 9 areas and students were encouraged to include both clinical and classroom examples. Artifacts included course projects and papers as well as clinical documents such as lesson plans, deidentified evaluation reports, and photographs of environmental modifications or treatment activities designed and implemented by the student. Included below are a sampling of artifacts and pertinent selections from reflections that represent portfolios of our students.

SINGER VOICE REHABILITATION

BY HANNAH PEERLESS, DANIELA LOZANO, AND JOY DUGGAN

CASE HISTORY:
Use McCurry
Age: 34
Occupation: Musical theater performer/actress; plays a volatile and emotional character.
Medical: History of anxiety and seasonal allergies; Family history of high blood pressure
Social: Significant public appearances and social obligations. She recreationally drinks alcohol and smokes tobacco and cannabis.
Interview Findings: Patient complains of having a hoarse, “scratchy” sounding voice that worsens at the end of a long day. She first noticed symptoms around 6 weeks ago when she felt her voice begin to fatigue during practices for her upcoming performance. She reports that since then, her voice seems to have gotten worse and requires increased effort to sing and speak. After her primary care doctor referred her to a local otolaryngologist, she was diagnosed with bilateral vocal fold nodules.

PRESENTING PROBLEM: Bilateral vocal fold nodules presenting in dysphonia with hoarseness and vocal fatigue

ASSESSMENT PROTOCOL:
ENT Referral: To provide a medical diagnosis of the voice disorder. An Otolaryngologist is a physician trained to medically and surgically treat disorders of the ear, nose, and throat (ENT) and related head and neck structures. “Some conditions for which a singer might see a laryngologist include nodules, cysts, granulomas, polyps, neurological disorders, LPR or GERD (reflux), vocal fold hemorrhage, sulcus vocalis, and voice overuse, as well as a common cold or allergies, should they be impacting the voice (Waggon, 2017).”
Interview: in-depth patient interviews are conducted to help the clinician to understand the patient’s perspectives and concerns regarding their voice, as well as understand habits, hygiene, and environments that can contribute to voice problems. This part of the assessment should include questions regarding how

the individual’s altered voice quality affects the individual both professionally and socially. Early evaluation is necessary for professional voice users, “as delay in diagnosis and treatment can have psychological and economic ramifications (Etcheller et al., 2018).”

Perceptual Assessments:

- **The Singer’s Voice Handicap Index (SVHI):** To assess the individual’s perception of singing difficulties and vocal health (Stemple, 2014).
- **CAPE-V:** An assessment used to describe the overall severity of the attributes of the voice problem. This helps the clinician establish an overall picture of the quality of voice, and use it to plan the course and direction of voice therapy. Since Lisa is a singer, this initial assessment will provide clinicians with the overall severity of her dysphonia. In the research article “Establishing Validity of the Consensus Auditory-Perceptual Evaluation of Voice (CAPE-V)”, they concluded that this assessment is reliable and valid when used by an experienced clinician (Zwack et al., 2011).

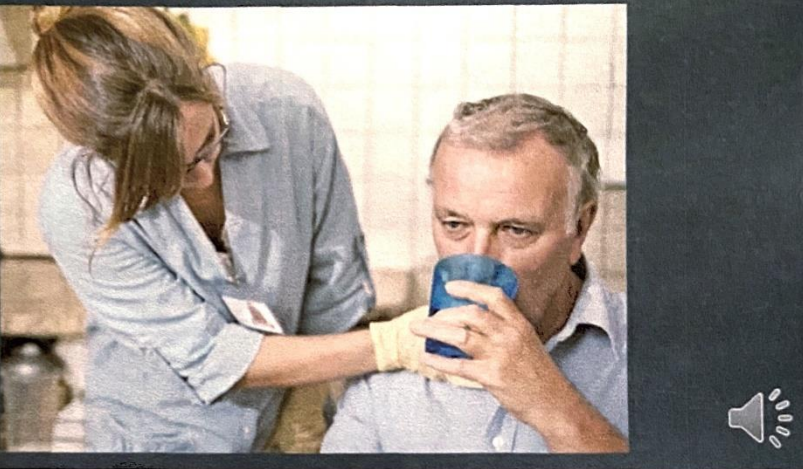
Instrumental Assessments:

- **The “Ambulatrix Phonation Monitor”:** To objectively document key phonatory behaviors over time, quantify phonation time, fundamental frequency, and vocal intensity. This tool is helpful for establishing baseline data (Stemple, 2014).
- **Videostroboscopy:** To provide high-quality images of the larynx and a slow-motion view of the vibration of the vocal folds, in addition, stroboscopy is important as a visual-perceptual assessment to describe the function of the vocal folds and “address the parameters of regularly, vocal fold vibratory amplitude, mucosal waves, vocal fold phase symmetry, vertical level, and glottal closure pattern (Patel et al., 2018).”

Voice and Resonance

“Although I had opportunities to treat voice patients in multiple clinical settings, it was in the classroom that I learned assessment and treatment processes for voice disorders most in depth. In my Voice Disorders class, I developed a comprehensive assessment and treatment protocol for a hypothetical patient.” – Hannah Peerless

Role of the Speech Pathologist



Speech Pathologists can serve as swallowing consultants for individuals in moderate to advanced stages of dementia. In many cases, appropriate medical management, feeding management, and/or swallow therapy can facilitate a patient's return to baseline eating function- ensuring the patient has not reached the final stage of dementia (Vilale et al). Speech pathologists can advise on medical referrals and strategies that address reversible causes for feeding issues. SLPs may perform assessments of swallowing such as a bedside swallow study, Modified Barium Swallow (MBS) study, or Fiber-endoscopic evaluation of swallowing.

- Based on the results of the examination, SLPs can make recommendations that include changes in:
 - Textures and consistencies
 - Environment
 - Skilled techniques that a caregiver can implement

Cognitive Aspects of Communication

“My group collaborated with Memorycare, a non-profit organization made up of physicians, nurses, social workers and volunteers whose goal is to help individuals with dementia live at home as long as possible. [They] requested that we create an educational video for staff, volunteers, and caregivers to inform them about the role an SLP can have in the care of an individual with dementia.” – Joy Duggan

IF YOU GIVE A CAT A CUPCAKE



Revised 6 | Pages 16-17

Questions


- Who climbed to the top of the rocks?
- Who walked at the bottom of the rocks?
- What did the cat see from the top of the rocks?

Answers



Augmentative & Alternative Communication Modalities

“My low-technology AAC device was designed to address a specific IEP goal. It acts as series of miniature AAC boards that accompany a book called If You Give a Cat a Cupcake... My client was excited to be able to participate and receive positive feedback after answering most questions correctly. Through this experience, I learned how to customize an AAC device to fit a client’s specific needs/goals.” – Mel Sala



Utilizing PEERS® & Circles Social Skills Training on Young Adults With Intellectual & Developmental Disabilities

Assessment Results

- TASKS:** 4 out of 8 students increased scores by 2-3 points after PEERS instruction.
- SSIS:** Mean scores increased for Personal Interaction with Others, Initiates Interaction with Others, and Responses to Social Contacts. Observed difference between student report and coach scores.
- Self Monitoring Tool:** Some students showed improvement in following class participation rules, especially by giving others a chance to talk. However, students who were quiet during sessions continued to require cuing to participate.
- Conversational Language Sample:** Observed growth for asking questions, showing enthusiasm, and closing conversations appropriately.

Figure 1. SSIS Pretest & Posttest Data

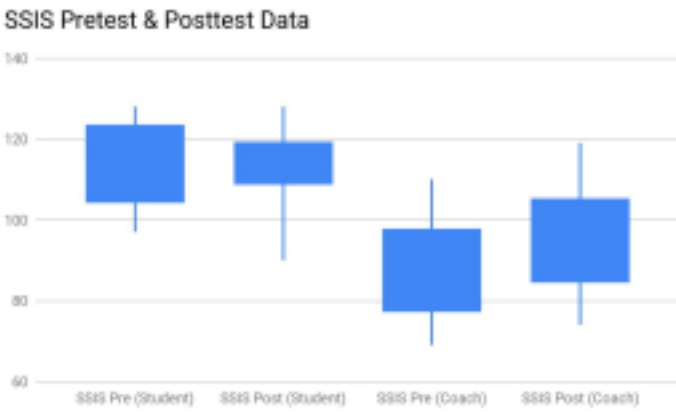




Figure 2. Circles Representation.
Levels of relationships as illustrated and labeled within the Circles Framework. Each level has an associated “I”-Y: Talk, Touch, and Trust. The Circles concepts were utilized throughout the program in many different contexts to promote collective intervention (Walker-Hirsch & Champagne, 1993).



CLASS PARTICIPATION



SELF MONITORING





Figure 3. Self Monitoring Sheet.
Students utilized laminated sheets with dry erase markers during each session to facilitate self-monitoring of participation.

Social Aspects of Communication

“I conducted a research study focused on understanding the effects of implementing the PEERS® program on young adults with intellectual and developmental disabilities... In November 2019, I present my research... in a technical clinical session at the American Speech-Language Hearing Association Convention.” – Kaylee Himes



HEARING LOSS AFFECTS 2 IN EVERY 100 CHILDREN UNDER THE AGE OF 10

INFANT + TODDLER HEARING CONSERVATION

Hearing is a first-order event for spoken language, reading, and learning. Consistent listening experiences in early childhood are critical for the development of speech-and-language in young children and sets the foundation for a strong spoken-language base that is essential for reading. Ear and hearing develop significantly in the first five years after birth. Infants and young children are more sensitive to loud noises than adults are. Because the ear canal is smaller in children, the sound pressure that is generated in the ear is greater compared to adults. Further, young child eardrums are even flatter than adult eardrums, hearing protection such as ear muffs, or noise canceling headphones, especially at a young age, helps to ensure optimal hearing as your child grows. Small ear plugs are a potential choking hazard for children, so they are not recommended.

CAUSES OF HEARING LOSS:
Hearing loss can be either congenital (present at birth) or acquired (occurring after birth) or transient (inside our infections or trauma).

CAUSES OF CONGENITAL LOSS:
• Infections during pregnancy
• Birth complications
• Genetic syndromes
• Family history of hearing loss
• Disorder of the inner or middle ear

CAUSES OF ACQUIRED LOSS:
• Childhood middle ear infection
• Tum or eustachian tube dysfunction
• Head injury
• Diseases that affect the ear
• Excessive loud noises

POSSIBLE HEARING HAZARDS FOR CHILDREN:
• Loud toys
• Television table volume
• Events such as, birthday, sports events, concerts
• Firearms/displays
• Mobile noise sleep machines
• Household appliances (vacuum, hair dryer, blender)

IMPORTANT HEARING MILESTONES FROM BIRTH TO AGE 2

0-4 MONTHS
Your infant should:
• React to loud sounds
• Respond to your voice by looking
• Calm down at a familiar voice

5-9 MONTHS
Your infant should:
• Recognize spoken to
• Notice when you make sounds
• Turn its head toward familiar sounds
• Make babbling sounds

10-15 MONTHS
Your infant should:
• Understand naming sounds
• Repeat some simple sounds
• Understand basic requests
• Respond to his name

16-24 MONTHS
Your infant should:
• Use many simple words
• Name common objects
• Show interest in songs and stories
• Follow basic commands
• Point to familiar objects you name

DOES YOUR CHILD:
• Not respond when you ask them to listen or other devices?
• Not respond when you call them?
• Complain of headaches, ear pain, or ringing?
• Have difficulty understanding what others are saying?
• Seek help right away if you suspect your child has hearing loss. Hearing loss has demonstrated that hearing loss results in significantly better outcomes.

For more information, please visit [HearingLoss.org](#) and [NICHD.org](#).

Hearing

“I partnered with another graduate student to provide information referring to hearing loss in the infant and toddler populations. Included in the handout is information regarding the cause of hearings loss (e.g. congenital or acquired), as well as possible hearing hazards for children (e.g., loud toys). This handout was posted in a pediatric private practice in addition to being distributed to parents of children who may be at risk for hearing loss or failed a hearing screening.” – Kaylee Himes

TIME	OBJECTIVE	PROCEDURES	MATERIALS
3:00-3:05	Rules + Agenda	Review the rules, punch card reward system, and agenda for today.	<ul style="list-style-type: none"> Rule sheet Punch cards Hole puncher Agenda board
3:05-3:20	Phonetically Regular Words Each student will spell and decode 10 PRWs with verbal cuing from the clinician with the following accuracies: ES – 80% DM – 90% NO – 90% NM – 90%	Decoding The students will have their own individual sound board and letter sets. They will be asked to spell the HFW with the letter cards. Then drill for reading. PRWs for today: grill, grab, grin, brat, brass, brick, fresh, frill, crab, drop	<ul style="list-style-type: none"> 4 Letter Sets 4 Sound Boards List of Words PRW cards for drill
3:20-3:40	High Frequency Words Each student will read and say 5 HFWs with verbal cuing from the clinician with the following accuracies: ES – 90% DM – 90% NO – 90% NM – 90%	St. Patrick's Day - HFW Coloring Sheet Students will look for HFWs on a sheet filled with many other words, and they will color the HFWs. Each student will be pulled aside to drill for HFWs. HFWs for today: than, first, water, been, call Also say: no, way, could, people, my	<ul style="list-style-type: none"> Custom coloring sheet Crayons HFW cards for drill
3:40-3:55	Snack Time + Bathroom Break		
3:55-4:10	Group Narrative Activity The clinician will read a short book and discuss the parts of a story.	Led by Brittney	

Receptive and Expressive Language

“[This] artifact is a sample of one of the lesson plans I created for Literacy Camp. Literacy Camp taught me valuable skills including time management, organization and how to design a single lesson plan for a group of four students with individual needs.” – Mel Sala

Evaluation of Capstone Project

The Capstone project was evaluated through two processes. First, the portfolios were reviewed by the Capstone course instructor using a rubric designed by the WCU SLP faculty. Students who failed to receive passing rubric ratings in any Big 9 area were required to revise the sections for additional review by the instructor. Students also completed group oral exams with the instructor who questioned students about the Big 9 areas and selected experiences presented in their portfolios. The evaluative process allows for a final evaluation of students’ problem-solving, writing, and oral presentation skills.

Big 9 Competency Area	Seminal Experience	Evaluation
1. Speech Sound Production		1 st rating _____ 2 nd rating _____
2. Fluency & Fluency Disorders		1 st rating _____ 2 nd rating _____
3. Voice & Resonance		1 st rating _____ 2 nd rating _____
4. Receptive/Expressive Lang.		1 st rating _____ 2 nd rating _____
5. Hearing		1 st rating _____ 2 nd rating _____
6. Swallowing/Feeding		1 st rating _____ 2 nd rating _____
7. Cognitive Aspects of Communication		1 st rating _____ 2 nd rating _____
8. Social Aspects of Comm		1 st rating _____ 2 nd rating _____
9. Augmentative & Alternative Comm Modalities		1 st rating _____ 2 nd rating _____
	The exiting student will list the experience and provide a reference portfolio page.	Rating Descriptors 1 = Does not meet entry level practice expectations 2 = Meets expectations 3 = Exceeds expectations

Conclusion

Portfolios are a unifying HIP that combine writing, reflection, and integration of knowledge obtained from coursework and community-based clinical experiences, into a single capstone project. They have been successfully implemented at WCU.

An additional benefit to students is a product that can be used when the course is completed. Students have reported that portfolios were useful during job interviews.

Future implementation of portfolios at WCU includes the optional creation of electronic portfolios using Class Notebooks in Microsoft Teams. This increases flexibility for students and faculty, which is particularly important during COVID-19. It also allows students to more easily transfer content to a personal website, which can be linked or uploaded to emails, job search sites, and social network platforms.

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Selected References

- Barlow, S. J., Hanks, J., & Tate, J. J. (2018). A study of capstone courses utilized in united states doctor of physical therapy program curricula. *Journal of Allied Health, 47*(2), 147-151.
- Gallagher, P. (2001). An evaluation of a standards based portfolio. *Nurse Education Today, 21*, 409–16.
- Kuh, G.D. (2008) *High-impact educational practices: What they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.
- Thompson, S. E., & Bybee, R. F. (2004). Professional portfolios for health educators and other allied health professionals. *California Journal of Health Promotion, 2*(1), 52–55. doi: [10.32398/cjhp.v2i1.581](https://doi.org/10.32398/cjhp.v2i1.581)
- Tochel, C., Haig, A., Hesketh, A., Cadzow, A., Beggs, K., Colthart, I., & Peacock, H. (2009) The effectiveness of portfolios for post-graduate assessment and education: BEME Guide No. 12. *Medical Teacher, 31*(4), 299-318. doi: 10.1080/01421590902883056
- Watson, C. E., Kuh, G. D., Rhodes, T., Light, T. P., & Chen, H. L. (2016). Editorial: ePortfolios -- The eleventh high impact practice. *International Journal of ePortfolio, 6*(2), 65-69.