1   **Doctoral Capstone: Purpose and Value**

2

3   **Opening Statement**

4   The purpose of this paper is to describe the doctoral capstone component of the entry-level occupational

5   therapy doctorate degree (OTD) for occupational therapists. The doctoral capstone is designed based on the

6   accreditation standards as outlined by the Accreditation Council for Occupational Therapy Education (ACOTE®,

7   2018) and includes both a capstone project and experience. As the culminating piece of the OTD, the doctoral

8   capstone provides students the opportunity to develop in-depth skills in one or more of the eight areas of focus

9   delineated by ACOTE®, ultimately resulting in dissemination of project outcomes, demonstrating synthesis of the

10   skills and knowledge gained. The doctoral capstone is collaboratively designed as an individualized, student-

11   centered, mentored experience, capitalizing on pedagogical approaches such as self-directed learning and

12   backward design.

13

14   **Objectives**

15   •   Describe the scholarly nature of the occupational therapy doctoral capstone

16   •   Delineate the constructs that may be used in the design of the doctoral capstone

17

18   **Definitions/Key Terms**

19   *Doctoral Capstone*: capstone project and capstone experience as defined in 2018 ACOTE standards

20   *Boyer's Model of Scholarship:* an academic model that includes four types of scholarship

21   *Service Delivery:* delivery of occupational therapy services in any context (medical, community, etc.)

22   *Client:* this term refers to individual clients, groups and populations

23   *Student-centered:* an approach to learning placing the student at the center of the learning process

24   *Mentoring*: a bidirectional relationship that is planned, generative, and developmental and facilitates meeting

25   co-created learning objectives

26   *Backward Design*: a course design method that aligns learning outcomes with teaching and learning strategies

27   and assessment approaches.

28

29   **Importance/Significance of the document**

30   In the last five years, the number of entry level doctorate programs has risen significantly. The doctoral

31   capstone is a required element in doctorate programs according to the educational standards established by

32   ACOTE. There is limited information on what the capstone is and the benefits it brings to students, graduates,

33   clinicians, clients and the profession as a whole. This document provides guidance on the doctoral capstone's

34   purpose, design and value.

35

36   **The Doctoral Capstone**

37   The doctoral capstone for occupational therapy programs consists of two components: the capstone project and

38   the capstone experience. ACOTE® defines the capstone experience as "a 14-week full-time in-depth exposure in

39   a concentrated area that may include on-site and off-site activities that meets developed goals/objectives of the

40   doctoral capstone" (ACOTE, 2018, p. 47). The capstone project and experience build upon each other and

41   provide an opportunity for the doctoral-level student to synthesize their knowledge and relate theory to

42   practice (ACOTE, 2018).

43

44   Whereas in fieldwork the primary focus is on students developing entry level competency as generalist

45   practitioners, the doctoral capstone provides an opportunity to learn a focused subset of skills concentrated on

46   leadership, advocacy, administration, research, education, clinical practice, theory development, and/or

47   program and policy development. The capstone may occur in a variety of settings, including medical,

48   educational, and community-based programs, presenting an opportunity for innovation and the potential to

49   advocate for diverse roles for occupational therapy in traditional, new or emerging practice settings.

50   A review of capstone expectations in other health care professions with professional doctorates can provide

51   context to the expectations and structure of the occupational therapy doctoral capstone. Seegmiller et al.

52   (2015) found that there is a trend in health care professions to move to an entry-level clinical doctorate, four of

53   which require a capstone. In the field of physical therapy, where a capstone is not mandatory but often utilized,

54   a capstone may be a means to promote best practice and provide meaningful scholarship from clinical doctorate

55   programs (Barlow et al., 2018). The Doctor of Nursing practice degree (DNP) requires student engagement in a

56   project designed to address improvements in health care outcomes (American Association of Colleges of

57   Nursing, 2015). The American Association of Colleges of Nursing (2015) states, "the integration of these new or

58   refined skills improves outcomes through organizational/systems leadership, quality improvement processes,

59   and translation of evidence into practice" (p. 2). This illustrates the same core concept of translation of theory

60   to practice, providing students the opportunity to integrate their learning into a culminating scholarly

61   product. Similarly, the occupational therapy doctoral capstone creates a meaningful integration of knowledge

62   and scholarship into professional practice in the leadership roles occupational therapy assumes in various

63   systems and society at large (education, research, policy, advocacy and administration).

64

65 The doctoral capstone in occupational therapy is a culminating experiential learning opportunity that is

66 individually developed in alignment with the doctoral student's own learning goals. The capstone project is

67 implemented and evaluated in collaboration with both a faculty and a site mentor during the experience. Prior

68 to the capstone experience, students work in collaboration with faculty/site mentor(s) to first identify a need or

69 gap in practice/services by performing a needs assessment and literature review, in order to inform their project

70 development. This provides the student the opportunity to bring forward knowledge regarding what is known

71 or has been shown to be efficacious, customize it to the site's needs, and then implement knowledge into

72 practice during their experience. Students select means of measurement, collect information or data, and

73 interpret outcomes of the project to summarize findings and make recommendations and/or determine

74 efficacy. Through this immersive experience, students also develop awareness of the complex factors that

75 influence the ways in which theories, evidence and knowledge discoveries can be implemented into day-to-day

76 practices. As indicated by the fields of knowledge translation and implementation science, it is critical for

77 students to first identify these complex factors before selecting strategies to help them expedite the use of

78 evidence into service delivery.

79 The capstone offers students the opportunity to integrate and/or apply what they have learned throughout their

80 education into the design, implementation, evaluation, and dissemination of a project that meets the needs of a

81 capstone site. Pedagogies of experiential learning, self-directed learning, and backward design serve to guide

82 the learning process. The doctoral capstone can be also grounded in Boyer's Model of Scholarship of Application

83 (Boyer, 1990), bringing the learner through the elements of discovery, integration, application/engagement and

84 teaching/learning. The OTD doctoral capstone provides the opportunity to create, implement, evaluate,

85 analyze, synthesize and disseminate a scholarly practice-based project. Students gain in-depth exposure in a

86 focus area that can contribute to their confidence and competence as an entry-level practitioner and foster their

87 professional autonomy as a leader.

88

89 **Student-centered**

90 Through mentorship, the doctoral capstone provides an opportunity to provide a more student-centered

91 approach in the final doctoral year of education. Student-centered or learner-centered education is

92 recommended in higher education to better meet students' needs while promoting application of learning as

93 well as life-long learning (Weimer, 2002). This shift to self-directed learning moves the responsibility to the

94 learner, which aligns with the intended learning outcomes of a doctoral program.

95

96 The individualized nature of the doctoral capstone affords students the opportunity to be self-directed learners

97 throughout the design, implementation, evaluation, and dissemination phases of the doctoral capstone. Self-

98 directed learning is an essential part of student-centered learning. With roots in andragogy, adult education and

99 humanistic philosophy, self-directed learning involves the learner taking responsibility for their own learning and

100 includes concepts of autonomy, independence, and self-initiation (Chu et al., 2012; Loeng, 2020; Tough, 1971;

101 Knowles, 1975). Self-directed learners are active agents of change in their own learning process (Jones 2017;

102 Morris, 2019). Self-directed learning has often been referred to as both the goal and the process of adult

103 education and is a collaborative process between teacher or mentor and learner (Garrison, 1992; Loeng, 2020).

104

105 Self-directed learning enables students to set individualized learning objectives, take actionable steps towards

106 meeting their learning objectives, and adjust the objectives as needed. As part of the doctoral capstone process,

107 students work with both faculty and site mentors to collaboratively set learning objectives in accordance with

108 their own individual professional goals and the needs of the capstone site, while also factoring in the expertise

109 of the mentor(s). Self-directed learners can adapt to constantly changing needs or demands around them

110 (Helterbran 2017; Morris, 2019), a necessary skill-set for students to demonstrate during the entire process

111 preparing for and participating in the doctoral capstone. The self-directed learning process involves learners

112 choosing to expand and grow the specific knowledge, skills, or abilities that are imperative for meeting the

113 needs of the learning task (Morris, 2019). This is represented in the individualized nature of the doctoral

114 capstone through the preparatory steps of the literature review, needs assessment, evaluation plan, and

115 individualized goals and objectives of the capstone project. The self-directed learning process is also supported

116 through the identification of a mentor appropriate for the doctoral capstone project. Mentorship that matches

117 the student's stage of self-direction and helps them advance towards greater self-direction is necessary for

118 success (Grow, 1991).

119

120 **Mentoring**

121 The mentoring relationship that occurs during the doctoral capstone project planning and experience focuses on

122 the personal and professional growth of the doctoral student. The relationship is planned, generative,

123 developmental and reciprocal (Ragins, 2007; 2012). During level II fieldwork, the goal of the supervisory

124 relationship is to foster students' development of skills and clinical reasoning essential for entry-level proficiency

125 in the role of an occupational therapist in a specific practice setting. Mentorship in the doctoral capstone is a

126 formal and collaborative relationship based on co-created objectives. Mentoring is a dynamic and interactive

127   process of growth and learning that evolves over time and involves the student, site and faculty mentor(s) (Low

128   et al., 2018).

129

130   Mentoring can be a meaningful relationship that can benefit both the mentor and mentee (Barker, 2006). For

131   mentees, it has been found to result in greater job satisfaction, higher performance evaluations, and higher

132   salaries. For mentors, they may find satisfaction in developing the next generation of therapists, master new

133   skills, maintain currency in evidence-based practice, and improve overall job satisfaction (Wanberg et al., 2003).

134   The mentoring relationship provides the mentee technical guidance that is interwoven with committed support,

135   ongoing feedback, motivation and empowerment to meet established goals within the identified timelines (Eby

136   et al., 2012).

137

138   A mentoring relationship requires trust, flexibility, and an ability to learn from one other. Creating a mentoring

139   agreement can help define the ways in which the mentor and mentee can build a respectful, caring, and

140   responsive way of working together while remaining accountable to meeting the co-created

141   objectives. Mentoring relationships will touch on sensitive themes related to values, worldviews, perceptions of

142   ideal versus real selves, and balance of personal and professional lives. Open and honest communication is

143   essential and articulating how conflict will be addressed is an important element of the relationship (Eby et al.,

144   2012; Ragins, 2012; Xu & Payne, 2014). At times, a mentor may serve as a coach, adviser, advocate, role model,

145   or liaison to professional networks. Mentors may offer directions or nurturance of skills or provide

146   opportunities for mentees to stretch and grow their skills in less directive ways.

147

148   **Backward Design**

149   Concepts from backward course design are likely to be helpful in designing the doctoral capstone because of the

150   individualized learning goals, student-centered approach, and essential components of mentoring. Backward

151   design is a method that involves starting with the outcomes or learning goals and moves "backwards" to identify

152   and develop the details of the learning experience (Reynolds & Kearns 2017; Kelting-Gibson, 2005). It ensures

153   that learning outcomes, teaching and learning activities and assessments are integrated and connected. The first

154   step of the process is determining "must-haves" and "nice-to-haves." The "must-haves" are essential

155   knowledge, skills and attitudes that are likely to transfer to other contexts and result in enduring understanding

156   (Wiggins & McTighe, 2005). "Nice-to-haves" may support the "must-haves" but are not essential. Once

157   determining the "must-have" knowledge and skill development for the capstone experience, students can

158 develop learning goals. Significant learning goals should connect to prior knowledge, project focus and the

159 student's future career to enhance the student's self-knowledge and reflection.

160

161 Once the learning goals are established, the student can determine how the goals will be evaluated and what

162 activities are needed to meet the goals. The evaluation process should involve plans for both formative

163 assessment (i.e., feedback during skill development) and summative assessment (i.e., evaluation of outcomes)

164 are included in the design process. The learning activities should involve active doing and address multiple

165 aspects of significant learning (foundational knowledge, application/skills, integration, learning about self and

166 others, caring, and learning how to learn) (Fink, 2013; Daugherty, 2006).

167

168 **Conclusion**

169 The doctoral capstone provides an opportunity for knowledge and scholarship to be translated and integrated

170 into practice. Doctoral candidates are required to publicly disseminate the results of the doctoral capstone and

171 are encouraged to do so via multiple venues such as program, state, national and/or international professional

172 presentations, publications and more. The doctoral capstone (experience and project outcomes) offer a

173 mechanism to showcase the diverse capabilities of the occupational therapy practitioner and profession to be

174 recognized and operationalized through the contributions students make during the doctoral capstone. Doctoral

175 candidatess develop unique skill sets during the doctoral capstone that can help meet the needs of individuals,

176 groups, organizations, and society as a whole.

177

178

179 **Ad Hoc Document Development Committee:**

180 Theresa Delbert, OTD, OTR/L

181 Anna Domina, OTD, OTR/L

182 Jennifer Kaldenberg, DPH, OTR/L, SCLV, FAOTA

183 Erika Kemp, OTD, OTR/L, BCP

184 Wanda Mahoney, PhD, OTR/L

185

186 **Commission on Education Members:**

187 Tina DeAngelis, EdD, MS, OTR/L

188 Andre Johnson, BHS, COTA/L

189 Celeste Z. Alexander, MS, OTR/L

190   Alexandra N Keehn, MOT, OTR/L, CBIS

191   Erika Kemp, OTD, OTR/L, BCP

192   Shannon Levandowski, EdD, OTD, OTR, MS, BCP, SCSS

193   Wanda Mahoney, PhD, OTR/L

194   Inti Marazita, MS, OTR/L

195   Julie McLaughlin-Gray, PhD, OTR/L, FAOTA

196   Bridgett Piernik-Yoder, PhD, OTR

197   Kim Qualls, OTD, MS, OTR/L

198   Kenyatha Richardson, OTA/L

199   Audrey Wilson-Alston, MBA, COTA/L

200   Janie Yue, S/OT

201   Neil Harvison, PhD, OTR, FNAP, FAOTA

202

203

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