

# Special Educator Course Format Preferences

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## Abstract

Online special education courses and programs are widely available and provide pathways for both initial certification and in-service professional learning. Despite the wider availability of online special educator courses and programs due to the COVID pandemic, very limited research about special education candidates and educator preferences for online courses is available. This study included 965 special education teachers and paraprofessionals who completed an online survey of their preferences about various special education course formats and lengths. Results indicated that special educator course format and length preferences varied and that fully online courses are not uniformly the top choice. Findings also suggested that shorter online courses (e.g., 7-weeks) are best suited to knowledge-based topics, while skills-based courses benefit from longer course duration (e.g., 15-weeks). Implications for special education program delivery are discussed.

*Keywords:* Online courses, special education, remote learning, course format

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Before the global COVID-19 pandemic, colleges and universities began offering fully online courses and degrees. Initially, most online courses were entirely asynchronous. More recently, additional online formats and combined on-campus and online options have been added. Alongside the emergence of online college courses, researchers have begun to investigate various aspects of online instruction. Although the literature about online instruction is still very young, some initial findings are available. Much of the available research has been conducted with online courses in healthcare, social work, and education. Importantly, these are fields facing significant labor shortages and some online degree programs were developed for the purpose of addressing these shortages (Tiedt et al., 2021). Research to date has addressed aspects of students' online experiences, effective online instructional practices, curriculum needs, and accreditation. The findings reveal that interest and support for online instruction is increasing alongside the need for more comprehensive online curriculum development that meets accreditation standards.

A significant benefit of online college programming is that such courses can be accessed from any global location where there is an internet connection. Among the occupations with recently expanded online course availability is teaching (Dunn & Rice, 2019). The U.S. is experiencing a major shortage of teachers, including special education teachers, and online college programs to prepare future special educators are one possible pathway to address this shortage (Gaines, 2022). Although there are certain advantages to online teacher preparation, very little is known about prospective teacher preferences for online learning. Gardner et al. (2021) found that adult-learner preferences for online course formats in many different disciplines varied across age, family situation, employment, and motivation. These findings suggest that it is important for colleges and universities to consider when, where, and how courses are offered to attract and retain successful students. Considering the dire shortage of special education teachers, information about the course format preferences from individuals already working in special education could help provide information about what course features are most likely to appeal to future special educators.

Course format preferences result from prior learning experiences and can contribute to a student's learning success. In the case of adult students such as prospective teachers, course format preferences could influence the decision to enroll in a course, the level of effort and satisfaction with course assignments, and overall course outcomes. Online course and program options have radically changed the options available for those who seek to become teachers and there is emerging agreement about course format definitions (Johnson et al., 2022). The expansion of choices could contribute to more customized learning for future teachers, but only if students know about, and can select their preferred course format (Gardner et al., 2021). For professions with current critical shortages, such as special education, information about what course formats are preferred is especially important in order to support degree completion and workforce development.

## **Special Educators' Online Learning Experiences**

Only five research studies were located that included a specific focus on special education online courses and preparation. A 2014 study by Vernon-Dotson and colleagues summarized research about different types of course delivery for special educator candidates. Their analysis indicated that online course outcomes were about the same as those for on-campus courses. In 2018 Juarez and Purper published a quantitative analysis of available studies regarding various types of instruction for future special educators. Although they noted that very

few studies that explicitly analyzed the outcomes of online instruction for special educator candidates were available, they did find that the use of topic-specific online modules as part of special educator courses can be an effective way to prepare future special education teachers to use evidence-based practices in their later teaching. This finding is like Luo et al., (2017), who found that authentic learning activities that are tied to professional tasks are more enjoyable for instructors and students.

Two recent studies examined the use of Universal Design for Learning (UDL) with special educator candidates. UDL is a practice widely used by special educators in public schools to ensure access for students with disabilities. A survey of graduate students in special education courses revealed that the instructor's use of UDL strategies helped them to be more connected and engaged with the course (Lohman et al., 2018). A more in-depth, quasi-experimental study examined how well special educator candidates applied learning about UDL in sample lessons they created. In this study, special education student teachers completed three online modules about UDL and then created lesson plans to deliver in their field placements (Lee & Griffin, 2021). The lesson plans were then scored using a rubric, with the scores compared to pre-UDL course lessons the participants had developed. All participants showed improvement in the use of UDL and overall lesson quality. In addition, a concluding survey revealed that the candidates found the modules helpful and that they planned to use what they learned in their future teaching.

### **Other Online Learning Research**

The earliest research about online instruction often compared students' experiences in on campus and online courses. As recently as 2011, a large study of students and faculty in an Australian university found that both groups were less satisfied with the online instruction than on-campus classes (Guest et al., 2018). Baran and colleagues (2011) suggested that dissatisfaction with online courses might be due to the fact that this method of instruction requires changes in student and teacher roles. In particular, online instruction at the college level needs to take into consideration two important factors: (a) students are adult learners, and (b) online instruction includes different types of interactions than in on-campus classrooms. Although online classes offer significant flexibility for learners, the learning still requires engagement and interaction with the content, instructor, and other students. If the students have limited time for such learning, it can affect the outcomes.

No studies with special educators were found that focused on student engagement and interactions, or about how students demonstrated their learning. Research with students in other disciplines has suggested important information about these components of online learning. For example, Foronda (2014) noted that student engagement and a sense of community are essential for effective online nursing instruction. In a study of online instruction for continuing medical education (CME) many physicians found their own lack of time and variable participation rates to be barriers to effective online learning (Guan et al., 2008). Recommended online instruction practices include using a variety of software tools, frequent instructor presence, and assignment options can help keep students engaged. Student engagement is a major theme in many studies of online instruction and one of the factors that influences student engagement is instructor presence (Foronda, 2014). Importantly, there are multiple dimensions to instructor presence online and these include being present to students through teaching, cognitive modeling, and social interactions (Dunn & Rice, 2019).

Additional research about online learning outcomes for medical students showed that the selective use of online modules was associated with higher student satisfaction and better course performance. Specifically, Sawarynski and Baxa (2019) found that how and when an online module bank was used influenced students' actual use of the modules as well as their satisfaction with the course, perhaps due to the modules influencing how the students demonstrated their learning. This finding is similar to Ellaway et al. (2014), who noted that contextual and environmental factors had a large effect in medical students' use and satisfaction with multimedia learning modules. Their study also indicated that module alignment with required exams as well as instructor attitudes toward the modules were very important in student usage. These studies together suggest that organizing learning activities into "modules" which focus on specific topics appeals to current and future physicians. In addition, the Sawarynski and Baxa findings suggested that providing learners with choices about learning content improves engagement.

A recent study (Sharma et al., 2020) evaluated the frequency and duration of students' logins to the learning management system (LMS) used with a hybrid communications course. Findings showed that both frequency and duration of the students' online sessions were correlated with the final course grade, with frequency more highly correlated than duration. Given that students are likely to vary in relation to how long they need to be logged in for the purpose of completing and understanding online assignments, it makes sense that more frequent logins were the best predictor of student grades because more repeated contact with the content is more likely to reinforce prior exposures. Another factor associated with the quality of students' online learning experiences is the amount of preparation to teach online the instructor had prior to the course. In a study of online social work courses, Alston et al. (2017) found that discipline-specific professional learning enhanced student satisfaction and learning outcomes.

In other research with students in health-related programs, researchers examined the effects of course length on learning outcomes. A longitudinal study by Stephens (2012) compared students' grades from 4-week and 8-week versions of an online physiology course over a 5-year time period. The results showed that the grades were roughly equivalent for both sections. Similarly, Harwood et al. (2018) compared final assignment grades for students in 7-week and 15-week online courses and showed the scores were not significantly different. Additionally, the students' course evaluations were highly similar across both formats.

### **Preparation, Curriculum, and Accreditation**

A number of the research studies cited above provide information about how teaching online is not the same as teaching on campus. This reality suggests that preparation for online teaching is important (Adnan, 2017). Several studies have examined the role and importance of preparation to teach online, both at the college level and in K through 12 school settings. Ching et al., (2018) noted that a course in online teaching is an important start, but likely not sufficient to fully prepare instructors. It is likely that teaching online will create discomfort for some faculty but taking time to learn to do it well is worthwhile (Archibald & Barnes, 2017). Importantly, college and university faculty need to consider the extent to which they intend to make their courses and programs available in fully online formats (Ching et al., 2018) because doing so requires different preparation than on-campus delivery.

Teacher education has both state and professional accreditation standards, and these must be considered when planning online instruction (Davis et al., 2019). Notably, Smith et al. (2016) conducted a survey of higher education faculty teaching in special educator teaching programs. The findings revealed that a majority taught their students to teach online in K through 12

settings in the future. Despite this program component, many faculty members did not realize that standards for online instruction exist (e.g., iNACOL). Yet, many of the skills included in the courses included those in the iNACOL standards for quality online instruction. Nonetheless, many of these standards were not covered in the courses reported by participants. In general, there is very limited research about applicable standards for online instruction. For faculty who teach in professional preparation programs such as healthcare, social work, and education, two levels of standards must be kept in mind: (a) online instruction standards, and (b) professional standards required for certification or licensure. The professional standards must be met so that graduates can earn practice credentials. In order for online programs to be effective in preparing graduates for such standards, it seems likely that they must also apply online instruction standards.

Online degree programs are one way that colleges and universities have attempted to prepare more special educators. Due to the severe shortage of special education teachers, identifying the course formats that those already in the field prefer, could offer important information about the course and program features most likely to attract more individuals into the field of special education. These programs offer the benefit to students of being able to stay in their current locations while completing the degree. Nonetheless, no research to date has examined either current or future special educators' preferences regarding online learning. This survey study examined special educators' preferences for different course formats, lengths, and topics through the following research questions.

1. What is the *frequency of course format* (on campus, combined on campus and online, synchronous online, asynchronous online, combined synchronous and asynchronous online) for *currently enrolled* and *most recently completed* special education courses and are there differences in course format in relation to current enrollment?
2. What *course format* (on campus, combined on campus and online, synchronous online, asynchronous online, combined synchronous and asynchronous online) do special education teachers and paraprofessionals prefer and are there differences in format preferences between special education teachers and paraprofessionals?
3. What *course length* (7-weeks, 15-weeks) do special education teachers and paraprofessionals prefer, and are there *differences* in course length preferences between special education *teachers and paraprofessionals*?
4. Are there *differences* in 7-week and 15-week course *grade expectations* between special education teachers and paraprofessionals?
5. What *course topics* do special education teachers and paraprofessionals **recommend for** 7-week and 15-week online course formats and what are the *benefits, limitations, and perceived cost* of each length?

## Method

### Participants

A publicly available data base of special education teachers and paraprofessionals in a Northeastern state in the U.S. was used to collect email addresses. The sample included both special education teachers and paraprofessionals because both provided individualized and small-group instruction for students with Individualized Education Programs (IEPs) under special education teacher supervision. The database search resulted in a total of 10,532 emails for

the combined group of special educators. All study procedures were reviewed and approved by a university institutional review board.

A secure email message was sent to all of the available email addresses with an invitation to participate in the survey; the message included the approved IRB participant consent form which indicated that choosing to complete the survey provided consent. Qualtrics data indicated that 650 of the emails were not deliverable. Due to school district data security and firewall protections, an unknown number of additional intended recipients might not have received the invitation. A total of 985 surveys were submitted with 961 having complete data. Ten of the participants reported a current job assignment in general education, seven reported not currently teaching, and 56 indicated their current role as “other.” Survey data from participants who reported they currently worked in general education, were not working, or whose work setting was “other” were excluded from the analyses in order to focus on the responses of current special educators.

### **Instrument**

A 16-item survey was developed for this study (Table 1). Survey items included demographic data such as teaching assignment and certification(s), and years in education. The primary focus of the survey items was participant preference for different special education course formats based on the five following specific course options:

1. On campus
2. A combination of on campus and online
3. Synchronous online
4. Asynchronous online
5. A combination of synchronous and asynchronous online

The final section of the survey included items comparing 7-week and 15-week online course formats. First participants indicated whether they would prefer a 7-week or 15-week online course. Next, they indicated which special education course topics were best suited to 7-week or 15-week online formats. Finally, they indicated the benefits and limitations of 7-week online courses. Two of the items (5 and 6) were contingent on whether the participant was currently enrolled in a college or university course. The final item was an open-ended question regarding any other reflections or information the respondent wanted to provide.

### **Procedure**

The items and emails were entered into the Qualtrics software program and distributed to the special educators directly from the Qualtrics platform. The survey was available for a total of

**Table 1**  
*Survey Items*

Number	Question
1.	What educator credential(s) do you currently have? a. Special Education Teacher b. General Education Teacher c. Paraprofessional (Ed. Tech I, II, or III) d. Special Education Teacher Candidate e. None f. Other
2.	What is your current teaching assignment? a. Special Education b. General Education c. Paraprofessional (Ed. Tech I, II, or III) in Special Education d. Paraprofessional (Ed. Tech I, II, or III) in General Education e. Student Teaching f. Not currently teaching g. Other
3.	How long have you held your current position? a. Not currently teaching b. 1-5 years c. 6-10 years d. 11-15 years e. 16-20 years f. 20 or more years
4.	For how many total years have you worked in education? a. None (still a student) b. 1-5 years c. 6-10 years d. 11-15 years e. 16-20 years f. 20 or more years
5.	Are you currently enrolled in one or more college or university courses in special education? a. Yes b. No (skip item 6)
6.	In what format is/are your current college or university course(s) conducted? a. On-campus only b. Combination of both on-campus and online sessions c. Online synchronous only d. Online asynchronous only e. Combination of both synchronous and asynchronous online sessions (skip items 7-8)
7.	If you are not currently enrolled in one or more college or university courses in special education, in what year did you complete your most recent college or university course? a. 2016-2021 b. 2011-2015 c. 2005-2010 d. More than 15 years ago
8.	In what format was/were your most recent college or university course(s) conducted? a. On-campus only b. Combination of both on-campus and online sessions c. Online synchronous only d. Online asynchronous only e. Combination of both synchronous and asynchronous online sessions

Special Educator Course Format Preferences

Number	Question
9.	<p>If you were to enroll in a new college or university special education course in the near future, please rank order your preference of course formats.</p> <ol style="list-style-type: none"> <li>On-campus only</li> <li>Combination of both on-campus and online sessions</li> <li>Online synchronous only</li> <li>Online asynchronous only</li> <li>Combination of both synchronous and asynchronous online sessions</li> </ol>
<p>In recent years, some colleges and universities have begun offering online courses that last for a duration of 7 weeks. These courses are sometimes referred to as “accelerated” courses and they include all of the same content as a 10-week quarter or 15-week semester. Students can complete multiple 7-week courses at the same time or complete two sequentially in one semester-length term. The following questions refer to comparisons between 7-week accelerated online courses and traditional quarter or semester-length online courses.</p>	
10.	<p>If given the choice between enrolling in a 7-week online course and a 15-week online course in special education, which would you prefer?</p> <ol style="list-style-type: none"> <li>7-week online</li> <li>15-week online</li> <li>Depends on the course topic</li> </ol>
11.	<p>What course topics do think are best suited to the 7-week online format?</p> <ol style="list-style-type: none"> <li>History of Special Education</li> <li>Teaching methods</li> <li>Reading instruction</li> <li>Math instruction</li> <li>Behavior support</li> <li>Law and ethics</li> <li>Other</li> </ol>
12.	<p>What course topics do think are best suited to the 15-week online format?</p> <ol style="list-style-type: none"> <li>History of Special Education</li> <li>Teaching methods</li> <li>Reading instruction</li> <li>Math instruction</li> <li>Behavior support</li> <li>Law and ethics</li> <li>Other</li> </ol>
13.	<p>If you enrolled in a 7-week online special education course, do you expect you would earn the same, lower, or higher grade than the same course offered in a 15-week online format?</p> <ol style="list-style-type: none"> <li>The same</li> <li>Lower</li> <li>Higher</li> </ol>
14.	<p>What do you think are the benefits of 7-week online special education courses?</p> <ol style="list-style-type: none"> <li>Easier</li> <li>Finish more quickly</li> <li>More focused learning</li> <li>Earn certification more quickly</li> <li>Cost</li> <li>Other</li> </ol>
15.	<p>What do you think are the limitations of 7-week online special education courses?</p> <ol style="list-style-type: none"> <li>Harder</li> <li>Too much information in a short time</li> <li>Too much work in a short time</li> <li>Cost</li> <li>Other</li> </ol>



3 weeks, with reminders sent at the start of weeks 2 and 3. The survey was closed at the end of week 3. Once the survey was closed the data were downloaded into SPSS version 28 software. An initial data review was conducted to confirm data accuracy and to remove incomplete cases as well as those from individuals not currently teaching special education (e.g., general educators, administrators, and others). There were so many responses to the open-ended last question that those data were analyzed separately and not reported here. Due to the contingent items and optional final question, the maximum number of items a participant was expected to complete was 14. A participant's responses were part of the analysis if they included a current teaching assignment in special education, certification(s) held, and answers to any of the remaining questions.

### **Data Analysis**

This study utilized descriptive and comparative analyses to investigate which course formats, including online options, current special education teachers and paraprofessionals preferred for special education courses. This method is particularly useful for studies which seek to describe sample features as part of an effort to understand phenomenology (Beaudry & Miller, 2016). Demographic data summarizing the participants' current teaching assignment, certifications, years in their current role, and total years in education were compiled. Data indicating whether participants were currently enrolled in a college or university course and the format of the course were summarized. For participants not currently enrolled in a course, information about the date and format of their most recent course were noted. In order to identify which course formats were most preferred across roles, the case counts for preferred course formats were broken down by special education teacher, paraprofessional, and special education teacher candidate. Finally, t-tests were used to determine whether there were statistically significant differences between special education teachers and paraprofessionals regarding course formats, length, and expected grades.

## **Results**

### **Participant Roles and Experience**

A total of 965 teachers and paraprofessionals provided complete survey responses. Table 2 displays a breakdown of all teacher participants according to their current work assignments and certificate(s) held. There were 374 who reported working as special education teachers, with 364 of these being certified in special education. This suggests that 10 of those currently working as special education teachers were not certified in this area. Ten participants reported working as general education teachers, although 21 indicated general education certification. There were 540 total paraprofessionals, with 91 of these working in general education and the other 449 in special education. Four participants indicated that they were special education teacher candidates and a total of 22 reported that they had a "certificate" as a special education teacher candidate. Such a certificate does not exist in the state, and it might be that these participants were referring to a conditional certificate which is available. Seven of the participants reported they were not currently teaching nor in any other education role, and 12 participants indicated they were certified as teachers, but not teaching; these individuals might have held administrative roles. A total of 56 respondents selected "other" as their current teaching assignment, with six of these indicating current certification. Due to the focus of the research on course preferences of special educators, only the responses from teachers, paraprofessionals, and student teachers who reported currently working in special education are included in the following results.

**Table 2**

*Number of Participants (percentages\*) by Current Teaching Assignment and Teaching Certificate Types*

<b>Role</b>	<b>Assignment (N=961)</b>	<b>Certificate (N=965)</b>
Special Education Teacher	374 (38%)*	364 (37%)
General Education Teacher	10 (1%)	21 (2%)
Paraprofessional Teaching in Special Education	419 (43%)	540 (55%)
Paraprofessional Teaching in General Education	91 (9%)	
Special Education Teacher Candidate	4 (0.4%)	22 (2%)
Not Currently Teaching/None	7 (0.7%)	12 (1%)
Other	56 (6%)	6 (0.6%)

\*Percentages may not equal 100 due to rounding

Most participants were relatively new to their current roles, and most special education teachers (N=206; 55%) reported being in that role for one to five years (Table 3). The number of paraprofessionals with one to five years in their current roles was even higher at 293 (71%). Two of the student teachers reported being in their roles for one to five years. Despite the newness in their current jobs, participants were a moderately experienced group of educators overall, especially the special education teachers, with 101 (27%) having worked in education for over 20 years. Indeed, only a minority of the teachers (N=55; 15%) were new to the profession. Among paraprofessionals, the years in education were opposite, with 175 (42%) having one to five years of experience and 75 (18%) with more than 20 years of experience (Table 4). Two of the student teachers (50%) indicated one to five years in education while the other two (50%) indicated six to ten years.

**Table 3**

*Number of Years (percentages\*) in Current Assignment for Special Education Teachers, Paraprofessionals, and Teacher Candidates*

<b>Role</b>	<b>Years (%) in Current Assignment</b>				
	<b>1-5</b>	<b>6-10</b>	<b>11-15</b>	<b>16-20</b>	<b>20+</b>
Special Education Teacher	206 (55)	74 (20)	35 (9)	20 (5)	38 (10)
Paraprofessional	293 (71)	55 (13)	21 (5)	15 (4)	25 (6)
Special Education Teacher Candidate	2 (100)	0	0	0	0
Total (N=784)	501 (64)	129 (16)	56 (7)	35 (4)	63 (8)

\*Percentages may not equal 100 due to rounding

**Table 4**

*Total Number (percentages\*) of Years in Education for Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	Total Years (%) in Education				
	1-5	6-10	11-15	16-20	20+
Special Education Teacher	55 (15)	84 (23)	66 (18)	67 (18)	101 (27)
Paraprofessional	175 (42)	85 (21)	49 (12)	28 (7)	75 (18)
Special Education Teacher Candidate	2 (50)	2 (50)	0	0	0
Total (N=789)	232 (29)	171 (22)	115 (15)	95 (12)	176 (22)

\*Percentages may not equal 100 due to rounding

**Most Recent Course Format**

Participants were asked to indicate whether they were currently enrolled in a college or university course related to special education. A total of 641 participants indicated they were not currently enrolled. These respondents were then asked to indicate when they last completed any college or university courses related to special education. Among teachers and paraprofessionals, 338 (53%) of this combined group reported that the most recent courses were taken between 2016 and 2021 (Table 5). This group was then asked to indicate the course delivery method for their more recent course (Table 6). The most frequent format was on campus, although many more paraprofessionals (N=139; 40%) reported completing an on-campus course than did teachers (N=65; 18%). The second most frequent format was combined on-campus and online (N=150; 21%) with online asynchronous courses the third most frequent (N=147; 21%). Both online synchronous (N=80; 11%) and combined online asynchronous and synchronous (138; 19%) courses had notable numbers as well.

There were 265 participants who reported that they were currently enrolled in a college or university course related to special education (Table 7). These participants reported that the online asynchronous format was the most frequent (N=91; 34%) with combined synchronous and asynchronous the second most frequent (N=85; 32%). While entirely on-campus courses were reported to be the least frequent (N=6; 2%), combined on campus and online courses (i.e., hybrid) were reported for 43 participants (16%), a number similar to online synchronous courses (N=40; 15%). As compared to participants who were not currently enrolled in a course, these numbers reflect a shift away from exclusively on-campus learning to a variety of online course formats, including combined on-campus with online. Two-tailed independent samples t-tests that compared course format preferences between those currently enrolled in a course and those who were not showed statistically-significant differences in rankings for all course formats (Table 8).

**Table 5**

*Numbers (percentages\*) for the Years When the Last College or University Course Was Taken by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	2016-2021	2011-2015	2005-2010	15 Years or More
Special Education Teacher	198 (65)	50 (16)	25 (8)	32 (11)
Paraprofessional	140 (45)	53 (17)	40 (13)	81 (26)
Special Education Teacher Candidate	0	0	2 (100)	0
Total (N=641)	338 (53)	103 (16)	67 (10)	133 (21)

\*Percentages may not equal 100 due to rounding

**Table 6**

*Numbers (percentages\*) of the Course Format for Special Education Teachers', Paraprofessionals', and Teacher Candidates' Most Recent Prior College or University Course*

<b>Role</b>	<b>On Campus</b>	<b>On Campus and Online</b>	<b>Online Synchronous</b>	<b>Online Asynchronous</b>	<b>Online Synchronous and Asynchronous</b>
Special Education Teacher (N=365)	65 (18)	72 (20)	39 (11)	88 (24)	101 (28)
Paraprofessional (N=350)	139 (40)	76 (22)	41 (12)	59 (17)	35 (10)
Special Education Teacher Candidate (N=4)	0	2 (50)	0	0	2 (50)
<b>Total (N=717)</b>	<b>204 (28)</b>	<b>150 (21)</b>	<b>80 (11)</b>	<b>147 (21)</b>	<b>138 (19)</b>

\*Percentages may not equal 100 due to rounding

**Table 7**

*Numbers (percentages\*) of Special Education Teachers, Paraprofessionals, and Teacher Candidates Currently Enrolled in a College or University Class by Course Format*

<b>Role</b>	<b>On Campus</b>	<b>On Campus and Online</b>	<b>Online Synchronous</b>	<b>Online Asynchronous</b>	<b>Online Synchronous and Asynchronous</b>
Special Education Teacher (N=142)	4 (3)	23 (16)	16 (11)	51 (36)	48 (34)
Paraprofessional (N=118)	2 (2)	18 (15)	24 (20)	38 (32)	36 (31)
Special Education Teacher Candidate (N=5)	0	2 (40)	0	2 (40)	1 (20)
<b>Total (N=265)</b>	<b>6 (2)</b>	<b>43 (16)</b>	<b>40 (15)</b>	<b>91 (34)</b>	<b>85 (32)</b>

\*Percentages may not equal 100 due to rounding

**Course Format Preferences**

The next section of the survey asked participants to rank order their preferences for future special education courses. Table 9 shows the numbers of participants by role who selected the five different course formats as their first choice for any future special education course. Across the roles, online asynchronous courses were the favorite (N=193; 33%) with combined on-campus/online courses (N=115; 20%) about equal to online synchronous/asynchronous courses (N=116; 20%) as the second favorite. Interestingly, on-campus courses were the next favorite (N=105; 18%). Among the formats, online synchronous was the least-picked favorite (N=55; 9%). Overall, all course formats were selected as a first choice by a meaningful number of participants.

**Table 8**

*Independent Samples t-Test Results Comparing Course Format Preferences Between Special Educators Enrolled in a Current College Course and Those Who Were Not*

Course Format	<i>t</i>	df	<i>p</i> *	Effect Size**
On-campus only	6.08	267	<.001	.49
On-campus and online	6.04	232	<.001	.53
Online synchronous	-3.23	227	<.001	-.28
Online asynchronous	5.57	229	<.001	-.49
Online synchronous and asynchronous	-4.00	241	<.001	-.34

\*two-tailed, equal variances not assumed; \*\*Cohen’s *d*

**Table 9**

*Numbers (percentages\*) of the First Choice for the Format of a New Course Taken by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	On Campus	On Campus and Online	Online Synchronous	Online Asynchronous	Online Synchronous and Asynchronous
Special Education Teacher (N=207)	48 (23)	52 (25)	23 (11)	101 (49)	74 (36)
Paraprofessional (N=285)	59 (21)	62 (22)	32 (11)	91 (32)	41 (14)
Special Education Teacher Candidate (N=3)	0	1 (33)	0	1 (33)	1 (33)
Total (N=586)	107 (18)	115 (20)	55 (9)	193 (33)	116 (20)

\*Percentages may not equal 100 due to rounding

The course format preferences for the special education teachers and paraprofessionals were compared to determine whether there were statistically significant differences in their preferences. Two-tailed independent samples *t*-tests were run using the mean rankings for each course format (Table 10). The results showed that teachers and paraprofessionals ranked on-campus, online synchronous, and online asynchronous courses about the same, with non-significant results for these formats. Statistically significant differences emerged between the teachers’ and paraprofessionals’ rankings of two course formats: (a) combined on-campus and online courses ( $t = 2.11, p = .035, \text{Cohen’s } d = .17$ ), and (b) combined synchronous and asynchronous courses ( $t = 3.68, p < .001, \text{Cohen’s } d = .17$ ). Paraprofessionals preferred combined on-campus and online courses more than the teachers, and the teachers preferred combined synchronous and asynchronous online courses more than the paraprofessionals. Despite these differences, the Cohen’s effect sizes between the groups were very small.

**Online Course Length Preferences**

The remaining survey items focused exclusively on online course length. Participants indicated whether they would prefer to take a 7-week or 15-week online course or whether the course length preference depended on the course topic (Table 11). Responses were very similar across roles, and about half (N=354; 49%) indicated that their preferred course length depended

on the topic. The second preference was the 7-week course (N=287; 40%) followed by the 15-week course (N=85; 12%). An independent samples *t*-test that compared teachers' and paraprofessionals' online course length preferences was not statistically significant ( $t = -.64$ ;  $p = .521$ ). Student teachers were not included due to their very small numbers.

**Table 10**

*Independent Samples t-Test Results Comparing Course Format Preferences Between Special Education Teachers and Paraprofessionals*

Course Format	<i>t</i>	df	<i>p</i> *	Effect Size**
On-campus only	1.84	581	.066	.153
On-campus and online	2.11	581	.035	.175
Online synchronous	-.22	581	.826	-.018
Online asynchronous	-.40	581	.688	-.033
Online synchronous and asynchronous	-3.68	581	<.001	-.304

\*two-tailed, equal variances assumed; \*\*Cohen's *d*

**Table 11**

*Numbers (percentages\*) of Preferred Online Course Length by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	7-Week	15-Week	Depends on Topic
Special Education Teacher (N=357)	143 (40)	46 (13)	168 (47)
Paraprofessional (N=366)	143 (39)	38 (10)	185 (51)
Special Education Teacher Candidate (N= 3)	1 (33)	1 (33)	1 (33)
Total (N=726)	287 (40)	85 (12)	354 (49)

\*Percentages may not equal 100 due to rounding

### Course Length Grade Expectations

Participants were also asked whether they expected the same, lower, or higher grade in a 7-week course (Table 12). The majority (N=584; 82%) indicated they expected the same grade. Lower grades were expected by 102 participants (14%) and higher grades expected by 24 participants (3%). An independent samples *t*-test compared the mean grade ratings for teachers and paraprofessionals. Results showed that there was a statistically significant difference between the expected grade ratings ( $t = -2.11$ ;  $p = .035$ ; Cohen's *d* =  $-.159$ ), with paraprofessionals expecting slightly higher grades than teachers (Table 13). Still, the effect size was very small and the overall means for both groups indicated that most expected the same grade.

**Table 12**

*Numbers (percentages\*) of Expected Grade in a 7-Week Online Course by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	Same Grade	Lower Grade	Higher Grade
Special Education Teacher (N=349)	299 (86)	40 (12)	10 (3)
Paraprofessional (N=358)	283 (79)	61 (17)	14 (4)
Special Education Teacher Candidate (N= 3)	2 (66)	1 (33)	0
Total (N=711)	584 (82)	102 (14)	24 (3)

**Table 13**

*Independent Samples t-Test Results Comparing Course Grade Expectations Between Special Education Teachers and Paraprofessionals for 7-Week Online Courses*

Course Format	t	df	p*	Effect Size**
7-week course grade	-2.11	696	.035	.159

\*two-tailed, equal variances not assumed; \*\*Cohen’s d

**Recommended Course Topics in Relation to Course Length**

Participants also indicated their recommended topics for 7-week and 15-week online courses (Table 14) using a list of common special education course topics as well as a choice of “other.” Participants could select multiple options for each online course length and the choices were fairly consistent between the teachers and paraprofessionals. Participants indicated that *History of Special Education* and *Law and Ethics* were best-suited to a 7-week online course format. Courses in *Teaching Methods*, *Reading Instruction*, and *Math Instruction* were rated as most appropriate for a 15-week online course format. One course topic, *Behavior Support*, was more evenly split, and resulted in 395 recommendations for 15-weeks and 368 for 7-weeks.

**Table 14**

*Recommended Topics for 7- and 15-Week Online Course Format by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

Role	History of Special Education		Teaching Methods		Reading Instruction		Math Instruction		Behavior Support		Law and Ethics		Other	
	7 Weeks	15 Weeks	7 Weeks	15 Weeks	7 Weeks	15 Weeks	7 Weeks	15 Weeks	7 Weeks	15 Weeks	7 Weeks	15 Weeks	7 Weeks	15 Weeks
Special Education Teacher	261	58	151	206	109	233	106	231	161	204	204	128	24	25
Paraprofessional	216	95	184	207	131	185	113	202	206	190	165	156	6	13
Special Education Teacher Candidate	3	0	0	3	2	1	2	1	1	1	2	1	0	0
Total	<b>480</b>	153	335	<b>416</b>	242	<b>419</b>	221	<b>434</b>	368	<b>395</b>	<b>371</b>	285	30	38

**Benefits, Limitations, and Costs of 7-Week Online Courses**

The final section of the survey included items in which participants provided information about the benefits and limitations of a 7-week online course format. As with the recommended online course length items, participants could select multiple benefits and limitations. Table 15 summarizes the responses regarding benefits. Participants indicated that *finishing more quickly* and *earning certification more quickly* were the top benefits of 7-week classes. *More focused learning* was a third benefit. *Cost* was rated as a fourth benefit, with more paraprofessionals than teachers rating it beneficial. Notably, very few participants (N=18) indicated that 7-week courses would be *easier*. Participants’ ratings of 7-week online course limitations revealed that both *too much information* and *too much work* were the top limitations (Table 16). The third most frequent limitation was that the 7-week online courses would be *harder*. Fewer participants endorsed *cost* as a limitation (N=29) as compared with its endorsement as a benefit. The option “other” was also selected, suggesting that participants identified additional features of online 7-week courses as having benefits and limitations.

**Table 15**  
*Benefits of 7-Week Online Course Format by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

<b>Role</b>	<b>Easier</b>	<b>Finish More Quickly</b>	<b>More Focused Learning</b>	<b>Earn Certification More Quickly</b>	<b>Cost</b>	<b>Other</b>
Special Education Teacher	9	272	156	193	96	14
Paraprofessional	9	269	169	223	120	7
Special Education Teacher Candidate	0	3	0	2	0	0
<b>Total</b>	<b>18</b>	<b>544</b>	<b>325</b>	<b>418</b>	<b>216</b>	<b>21</b>

**Table 16**  
*Limitations of 7-Week Online Course Format by Special Education Teachers, Paraprofessionals, and Teacher Candidates*

<b>Role</b>	<b>Harder</b>	<b>Too Much Information in a Short Time</b>	<b>Too Much Work in a Short Time</b>	<b>Cost</b>	<b>Other</b>
Special Education Teacher	85	231	228	11	32
Paraprofessional	116	228	230	18	23
Special Education Teacher Candidate	0	2	3	0	0
<b>Total</b>	<b>201</b>	<b>461</b>	<b>461</b>	<b>29</b>	<b>55</b>



## Discussion

Survey results suggest that special educators prefer online instruction over on-campus, with some differences between certified teachers and paraprofessionals. Notably, most participants were either currently enrolled in a college course or had taken one in the last five years. Nonetheless, there were differences in the course format preferences between those currently enrolled in a course and those who were not. Given that online instruction has become more prevalent in recent years, the differences in format preferences could be due to changes in how courses were provided when the most recent course was taken. Although prior research documenting the number of special educator programs that offer online courses or degrees was not found, available research indicated the benefits of online modules (Juarez & Purper, 2018) and UDL (Lee & Griffin, 2021; Lohmann et al., 2018) for future special educators. In addition, Vernon-Dotson et al. (2014) noted that online special education course outcomes are about the same as on campus courses. Online course formats are likely to keep changing as new technologies emerge, and these changes could affect students' preferences for course formats. To address the shortage of special educators, university programs could benefit from identifying and offering courses in formats that are preferred by special educators.

The variability in preferences for different online course formats suggested no clear preference. Indeed, it is perhaps more interesting that the least preferred format was online synchronous and campus courses were more preferred than online synchronous courses. Online asynchronous was the most preferred but other formats, including combined online and on campus, were also preferred by a significant number of participants. Statistically significant differences between special education teachers and paraprofessionals were demonstrated for two course formats: combined on-campus and online and combined synchronous and asynchronous online courses. Two prior research studies regarding course format preferences (Baran et al., 2011; Gardner et al., 2021) showed that in 2011, students preferred the on-campus version but by 2021, students preferred other formats. The Gardner et al. (2021) finding lines up with the current results and suggests that student experience and circumstances influence course preferences. Regarding the two course formats where special education teachers and paraprofessionals differed, the differences observed could be the result of how recently the most recent prior course was taken, its topic, or its format.

Notably, the results suggested that if a course requires a scheduled time commitment (i.e., on-campus, online synchronous) special education teachers preferred synchronous online sessions and the paraprofessionals preferred on-campus sessions. This is interesting in light of the fact that the special education teachers were the group having taken more recent courses. It's possible that their preference for online synchronous sessions over on-campus was the result of the recent trend toward more online course offerings. That said, special education teachers already hold the credential necessary for a career in special education and paraprofessionals do not. If recruiting current special education paraprofessionals to complete coursework to become special education teachers is employed as a way to address teacher shortages, then offering more combined on-campus and online courses might result in more enrolled students. If multiple course formats appeal to learners of different backgrounds, having format choices could help to attract more diverse special educators into the classroom, a need highlighted by a recent webinar series sponsored by CEC (Council for Exceptional Children, 2022).

Although survey responses suggested approval and support for various online course formats, findings about course length were mixed. Almost half of the participants indicated that the best length for an online course depends on the course topic and no significant differences

between the teachers and paraprofessionals related to course length were noted. This important information suggests that the combination of course length and topic could be the determinant when a special education college student selects online courses. Online courses have the benefit of near universal access but if a potential student thinks that the course length is not appropriate for the content, enrollment might not happen. It is notable that a clear majority of participants did not expect a different grade from a 7-week online course as compared with a 15-week course. However, there was a difference between the teachers and paraprofessionals regarding grade expectations, with the paraprofessionals expecting higher grades than the special education teachers. Again, this might be a recency effect since the teachers had taken courses more recently than the paraprofessionals and so they might have already learned that online course grades were not generally different from on-campus courses.

Of the six special education course topics provided in the survey, two were clear favorites for 7-weeks and a different three were selected for 15-weeks. The 7-week preferred courses (*History of Special Education, Law and Ethics*) both focus on knowledge more than skills. By comparison, the 15-week preferred courses (*Teaching Methods, Reading Methods, Math Methods*) focus more on skills, albeit built on knowledge. It might be that the participants' choices indicate an understanding that course content should drive decisions about course length. This survey result corresponds to prior research which showed that students found it very difficult to complete all assignments in shorter courses (e.g., 7 or 8 weeks; Guan et al., 2008; Tiedt et al., 2021). For online courses that include learning related to certification and licensure standards, it seems important to consider the course length to ensure that students can complete all work and meet the standards (Davis et al., 2019).

There are very few prior studies of the benefits and limitations of 7-week courses. Although some studies found that student learning outcomes were about the same for 7- and 8-week courses as compared with 15-week courses (Harwood et al., 2008; Stephens, 2012; Vernon-Dotson et al., 2014) other research indicates that shorter courses are more challenging for students because they struggle to complete the work on time (Guan et al., 2008; Tiedt et al., 2021). Participants in this survey indicated that shorter courses would reduce the time to reach professional goals. However, they also indicated that they are likely to include too much work in too short a time. Notably, very few participants (N=18) indicated that 7-week courses are easier. By contrast, many more (N=201) indicated that 7-week courses are harder. Together with the finding that course duration is best determined by course topic, and prior research indicating that some shorter courses can be very challenging, college and university faculty members may want to be highly selective in determining which courses are available in 7-week formats and which remain at 15-weeks.

There was an interesting finding in relation to the cost of 7-week courses. A significant number of participants (N=216) indicated that cost was a benefit of these courses while a much smaller number (N=29) indicated that cost was a limitation. It is possible that participants thought that shorter duration courses would cost less than longer courses. Given that most shorter courses include the same content, assignments, and credits as their 15-week versions, it seems unlikely that 7- or 8-week courses would be offered for a lower price. No findings specifically related to online course costs were included in the reviewed research. This survey's findings about cost suggest that colleges and universities might need to communicate that 7-week courses that carry the same numbers of credits as 15-week courses will cover the same content and cost the same amount.

## **Limitations and Future Research**

This study's findings cannot be generalized to all special educators because there might be sampling bias and other unaccounted factors in the results. Participants included a large convenience sample, yet their experiences with online instruction could be influenced by regional options. Also, due to an effort to keep the survey brief, information about participant's racial and ethnic backgrounds was not collected. In part due to COVID-19, online instruction is expected to continue growing for learners of all ages, including those who teach students with disabilities. Significantly more research is needed to provide guidance about the most effective online instruction methods for specific disciplines, topics, and student groups. For example, more studies that compare learning outcomes between shorter and longer duration courses of specific topics are needed. This study's results suggested that special educators see a benefit in matching course duration based on course topic. It might be that knowledge-based courses are better matched to shorter course lengths and skills-based courses should utilize longer course lengths, but this needs to be empirically tested for content in all education disciplines.

Additional important topics for future research include examining the overall readiness of teacher candidates prepared in fully online programs as compared with partially online and fully on campus programs. If there are notable differences in preparation, this could affect accreditation status as well as the teachers' classroom effectiveness. Although randomly controlled trials might not be possible for such research, quasi-experimental comparisons of cohorts could offer important information. In addition, more research about specific online special education teaching practices is needed. Questions to consider include whether evidence-based on campus instructional practices can transfer seamlessly to online environments or if changes are needed. And, are there online-specific instructional practices that should be identified and used in all special education courses because of their efficacy? For example, additional studies that examine course workloads related to amount and types of expected reading and assignments might help to provide additional information about whether online courses utilize similar or different pedagogy from on-campus approaches. Specifically, do online courses utilize traditional textbooks or are other materials such as websites or instructor-made videos included?

More investigation of the nature and frequency of student interactions is also needed. How do online courses incorporate student to student and student to instructor interaction and how do such interactions fit into the course expectations, assignments, and grades? A recent study suggests that student role-plays could be an effective tool for improving student engagement (Berry & Kowal, 2022). Such role-plays could be useful in teacher preparation programs because it is important that teachers be ready to collaborate with their fellow educators; information about online course interactions could shed light on how teachers are learning to collaborate in online settings. Finally, studies that examine students' ratings of their knowledge and skills before and after completing an online course could help college and university faculty determine the depth of student learning and how the students perceive their own intellectual development over time. Certainly, more research about online instruction is forthcoming and the more that special education faculty engage in such research, the better prepared all future special educators can be.

## **Conclusion**

Overall, the findings in this current study are largely consistent with prior research about special education course formats and online course duration. Participants reflected diverse preferences for online courses, some of which appeared linked with how recently they had taken a course in special education. At the same time, most all of the different course format options were selected by a significant number of special educators as their top choice, suggesting that no one online instruction format is seen as best across these special educators. Perhaps the most important finding was that course duration should be based on the course topic. This result suggests that current special educators understand that not all online courses are the same and certain types of learning require more time than others. As with prior research, findings indicated that shorter online courses offer both benefits and limitations. Until more research provides clear guidelines for shorter course content, providing a variety of course format options will offer special educators access to their preferred formats.

## **Declarations**

This study's method and procedures were reviewed and approved by the Social and Behavioral Sciences Institutional Review Board at the University of Southern Maine, USA.

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## References

- Adnan, M. (2017). Professional development in the transition to online teaching: The voice of entrant online instructors. *ReCALL*, 30(1), 88-111.  
<http://doi.org/10.1017/S0958344017000106>
- Alston, S. T., Moore, C. S. & Thomas, M. (2017). Strategies for enhancing online teaching in social work education. *Journal of Human Behavior in the Social Environment*, 27(5), 412-432. <http://doi.org/10.1080/10911359.2017.1311817>
- Archibald, C., & Barnes, C. (2017). Lessons learned from teaching online in undergraduate programs. *The ABNF Journal, Fall*, 114-118.
- Baran, E. Correia, A. & Thompson. A. (2011). Transforming online teaching practice: critical competencies of online teachers. *Distance Education*, 32(3), 421-439. <https://doi.org/10.1080/01587919.2011.610293>
- Baran, E. Correia, A. & Thompson. A. (2013). Tracing successful online teaching in higher education: Voices of exemplary online teachers, *Teacher's College Record*, 115(3), 1-15.
- Berry, L.A., & Kowal, K.B. (2022). Effect of role-play in online discussions on student engagement and critical thinking. *Online Learning Journal*, 26 (3), pp. 4-21.
- Ching, Y.H., Hsu, Y.C., & Baldwin, S. (2018). Developing online teaching expertise: An analysis of prospective online teachers' reflections. *Journal of Interactive Learning Research*, 29(2), 145-168.
- Council for Exceptional Children. (2022, April). From information to implementation: Combatting shortages of educators serving students with disabilities.  
<https://exceptionalchildren.org/events/information-implementation-combatting-shortages-educators-serving-swds>.
- Davis, C., Greenaway, R., Moore, M., & Cooper, L. (2019). Online teaching in social work education: Understanding the challenges. *Australian Social Work*, 72(1), 34-46.  
<http://doi.org/10.1080/0312407X.2018.1524918>
- Dunn, M., & Rice, M. (2019). Community, towards dialogue: A self-study of online teacher preparation for special education. *Studying Teacher Education*, 15(2), 160-178.  
<https://doi.org/10.1080/17425964.2019.1600493>
- Ellaway, R., Pusic, M., Yavner, S., & Kalet, A.L. (2014). Context matters: Emergent variability in an effectiveness trial of online teaching modules. *Medical Education* 48, 386-396.
- Foronda, C. (2014). Spice up teaching online. *Nurse Educator*, 39 (6), 265-266.  
<https://doi.org/10.1097/NNE.0000000000000081>

- Gaines, L. (2022, April 22). *Students with disabilities have a right to qualified teachers — but there's a shortage*. National Public Radio.  
<https://www.npr.org/2022/04/20/1092337446/special-education-teacher-shortage>
- Guan, J., Tregonnin, S., & Keenan. (2008). Social interaction and participation: Formative evaluation of online CME modules. *Journal of Continuing Education in the Health Professions*, 28(3),172–179
- Guest, R., Rohde, S.S., & Soesmanto, T. (2018). Student satisfaction and online teaching. *Assessment and evaluation in higher education*, 43(7), 1084-1093. <https://doi.org/10.1080/02602938.2018.1433815>
- Harwood, K. J., McDonald, P. L., Butler, J. T., Drago, D., & Schlumpf, K. S. (2018). Comparing student outcomes in traditional vs intensive, online graduate programs in health professional education. *BMC Medical Education*, 18(1), 240-240.  
<https://doi.org/10.1186/s12909-018-1343-7>
- Johnson, N., Seaman, J., & Poulin, R. (2022). Defining different modes of learning: Resolving confusion and contention through consensus, *Online Learning Journal*, 26 (3), pp. 91-110.
- Juarez, S. W., & Purper, C. (2018). Toward a model of learning and transfer: A review of instructional methods and learning outcomes in special education teacher preparation. *Teacher Education and Special Education*, 41(4), 292-307.  
<https://doi.org/10.1177/0888406417727041>
- Lee, A., & Griffin, C. C. (2021). Exploring online learning modules for teaching universal design for learning (UDL): Preservice teachers' lesson plan development and implementation. *Journal of Education for Teaching : JET*, 47(3), 411-425.  
<https://doi.org/10.1080/02607476.2021.1884494>
- Lohmann, M. J., Hathcote, A. R., & Boothe, K. A. (2018). Engaging graduate students in the online learning environment: A universal design for learning (UDL) approach to teacher preparation. *Networks: An Online Journal for Teacher Research*, 20(2), 2-21.  
<https://doi.org/10.4148/2470-6353.1264>
- Luo, T., Murray, A., & Crompton, H. (2017). Designing Authentic Learning Activities to Train Pre-Service Teachers About Teaching Online. *The International Review of Research in Open and Distributed Learning*, 18(7).  
<https://doi.org/10.19173/irrodl.v18i7.3037>
- Meseguer-Martinez, A., Ros-Galvez, A., & Rosa-Garcia, A. (2017). Satisfaction with online teaching videos: A quantitative approach. *Innovations in Education and Teaching International*, 54(1), 62-67. <https://doi.org/10.1080/14703297.2016.1143859>

[Sawarynski, K. E., & Baxa, D. M. \(2019\). Utilization of an online module bank for a research training curriculum: Development, implementation, evolution, evaluation, and lessons learned. \*Medical Education Online\*, 24\(1\), 1611297-1611297. <https://doi.org/10.1080/10872981.2019.1611297>](https://doi.org/10.1080/10872981.2019.1611297)

Sharma, B., Nand, R., Naseem, M., & Reddy, E. V. (2020). Effectiveness of online presence in a blended higher learning environment in the pacific. *Studies in Higher Education (Dorchester-on-Thames)*, 45(8), 1547-1565. <https://doi.org/10.1080/03075079.2019.1602756>

Smith, S. J., Basham, J., Rice, M. F., & Carter, R. A. (2016). Preparing special educators for the K–12 online learning environment: A survey of teacher educators. *Journal of Special Education Technology*, 31(3), 170-178. <https://doi.org/10.1177/01626434166660834>

Stephens, P. J. (2012). What is the optimum duration of an asynchronous distance learning course? *Advances in Physiology Education*, 36(2), 143-146. <https://doi.org/10.1152/advan.00083.2011>

Tiedt, J. A., Owens, J. M., & Boysen, S. (2021). The effects of online course duration on graduate nurse educator student engagement in the community of inquiry. *Nurse Education in Practice*, 55, 103164-103164. <https://doi.org/10.1016/j.nepr.2021.103164>

Vernon-Dotson, L. J., Floyd, L. O., Dukes, C., & Darling, S. M. (2014). Course delivery: Keystones of effective special education teacher preparation. *Teacher Education and Special Education*, 37(1), 34-50. <https://doi.org/10.1177/0888406413507728>