

# SELF-DIRECTED ONLINE LEARNING AND SPECIAL EDUCATION TEACHER PROFESSIONAL DEVELOPMENT: A CASE STUDY

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*Self-directed online learning (SDOL) is emerging as an important tool for teacher professional development, especially during a time of physical and social distancing. This may be even more appealing for special education teachers, who are tasked with bridging the gap between research and practice to meet students' diverse needs within their unique classroom contexts. The purpose of this case study was to explore two special education teachers' professional learning goals, thought processes, and web-based behaviors and actions over the course of three SDOL sessions. Participants' professional learning goals and thought processes were analyzed thematically, whereas their web-based behaviors and actions were the subject of a time sampling analysis. Findings revealed that the special education teachers included in the study had four types of goals for their SDOL: those that were (i) student focused, (ii) classroom focused, (iii) literacy focused, and (iv) pedagogy focused. Their thought processes were characterized by five themes: metacognitive awareness, monitoring learning, self-efficacy, challenges specific to special education, and reflecting on the impact of the COVID-19 pandemic. While both participants engaged in several different web-based behaviors, video-viewing and skimming stood out as important processes characterizing SDOL. The implications of these findings for professional development are explored both broadly and as they relate to the optimal design of online learning environments for special educators.*

**KEY WORDS:** teacher professional development, special education teacher professional development, self-directed online learning

## 1. INTRODUCTION

As educators increasingly turn to the Internet for their professional development (PD) (Charalambousa and Iannou, 2011; Delgado et al., 2015), it is essential to understand how teachers and, specifically, special education teachers engage in self-directed online learning (SDOL). SDOL is an extension of self-directed learning (SDL), the branch of adult learning theory that stems from an individual's desire to understand a given phenomena (Knowles, 1975). There are many models of SDL (e.g., Candy, 1988; Song and Hill, 2007), with Garrison (1997) referring to it as “an approach where learners are motivated to assume





academic content, student achievement, and assessment; (c) improve teacher knowledge; (d) increase teacher understanding of instruction based on scientific evidence; and (e) be regularly evaluated to assess its impact on both teacher effectiveness and student achievement. While the informal learning characteristic of SDOL may not occur in the same sustained or intensive bursts as more formal activities such as workshops, which are often measured in hours, several examples of content-focused SDOL exist, such as the emergence of online communities of practice devoted to a particular subject or area (Macia and Garcia, 2016).

Participation in online communities of practice may be sustained, however, over extended periods of time, with the added benefit that teachers can access resources at their convenience (Beach et al., 2022). As for alignment with standards for academic content, achievement, and success, since SDOL can be tailored to teachers' individual contexts, PD in web-based environments allows teachers to continually evaluate the quality and credibility of resources in the context of their current curriculum. The same is true of improving teacher knowledge and increasing teacher understanding of instruction based on scientific evidence. Wu and Chen (2008) found, for example, that teachers who engaged in informal PD using SDOL most often obtained up-to-date information that was directly related to their teaching subjects and current instructional needs. Additionally, considering evaluation is one of the themes underlying SDOL (Beach, 2017), it is particularly conducive to regular evaluations to assess its impact on both student and teacher learning (Powell and Bodur, 2019).

## 2.1 Special Education Teacher Professional Development

A challenge facing the field of special education—especially in the context of the COVID-19 pandemic—is limited access to PD opportunities that optimize teachers' abilities to use evidence-based practices (Suppo and Mayton, 2014). Limited access to PD can lead to frustration for those in the field who are trying to develop their knowledge and skills in ways that were not addressed during pre-service training (Francois, 2020). Several factors can act as barriers to accessing quality PD, such as traveling distance, arranging a cover teacher during the day, or arranging childcare for one's own children in the evening (Berry et al., 2011). As such, the teacher-led inquiry characteristic of SDL in online environments is emerging as an important tool for professional growth (Shurr et al., 2014). SDOL may be a particularly appealing form of professional learning for special educators as online environments can remove time and situational barriers (Kanuka and Nocente, 2003), and special educators often face additional time constraints due to the need for individualized planning and instruction (Johnson and Semmelroth, 2014).

Professional development specific to special education is associated with many benefits, such as the intention to remain in one's position (Billingsley, 2009), reduced levels of stress, improved teacher effectiveness, and a demonstrated commitment to the field (Berry et al., 2011). Challenges specific to special education that can be addressed through PD include meeting diverse student needs, teaching multiple ability levels, securing appropriate materials and resources, addressing student behavior, and managing various roles



used as a means of better understanding the issue itself (Stake, 1995). The data, which consisted of four different sources, were analyzed again in this context.

## 4.1 Participants

Two elementary teachers from Ontario, Canada volunteered to participate in the study while employed as special education teachers in self-contained settings within their respective school districts. As part of the larger study, a survey related to teachers' perceptions of online professional development was distributed online via the authors' social media accounts (Beach et al., 2022). At the end of the survey, respondents were asked if they would be interested in participating in the present study and, if so, to contact the authors. From there, homogenous sampling (Patton, 1990) was used to identify the special educators with the intention of describing the experiences of this subgroup of teachers in greater depth. To be included as part of the larger study, participants were all practicing elementary teachers in Canada. To be included as part of the instrumental case study, participants had to be currently working in a special education setting.

The first participant, Lisa (names are pseudonyms), worked in a split grade mixed exceptionalities special education classroom with students in grades 3–6. At the time of data collection, Lisa was between 25 and 29 years of age and had been teaching between one and five years. The second participant, Amanda, also taught in a split grade special education setting for students with autism spectrum disorder (ASD) in grades 6–8, was between 30 and 34 years of age, and had been teaching between six and ten years.

## 4.2 Procedure

Participants met with a member of the research team over Zoom™ for three monthly SDOL sessions. At the beginning of the first session, participants completed a short demographic questionnaire. Prior to the start of each SDOL session, participants were provided with the URLs to two literacy-oriented professional learning websites [see Ontario Institute for Studies in Education (2021) and WETA (2022)]. While these websites were selected as starting points for the SDOL sessions due to their research-informed content, user-friendly interfaces, and popularity with teachers, participants were also encouraged to select hyperlinks to other sites or explore any websites with which they were familiar.

Each session began by asking the participants to state a professional learning goal related to their literacy practice. Participants were reminded that their goals could be related to the two literacy resources provided, though this could also be related to their current classroom contexts. The participants were then asked to share their screen via Zoom™ while they completed a 20 min open-ended task to navigate websites of their choice. Their navigations were recorded using Camtasia Studio™, a screen-recording program developed by TechSmith™. At the end of the 20 min, participants were asked to stop their navigations so their screen recordings could be played back to them. The virtual revisit think aloud was then



verbalizations; and 2) they allowed for an in-depth analysis of participants' web-based behaviors and actions. Together with the virtual revisit think aloud, the screen capture recordings allowed for moment-to-moment insights into the participants' Internet navigations.

#### 4.3.4 Follow Up Semi-Structured Interviews

The semi-structured interviews that immediately followed the third session were also audio recorded, and involved questions related to the participants' general feelings about their navigations and the virtual revisit think aloud process. During the interviews, participants commented on what they found challenging about the process, what stood out to them about particular websites, what they felt was missing from their navigations, if they plan to incorporate any of the information they came across during the sessions into their classroom practice, and anything else that they wanted to share about the experience. Like the think aloud verbalizations, the interviews were audio-recorded and transcribed verbatim.

### 4.4 Data Analysis

This case study followed similar procedures to the larger mixed methods study, employing both qualitative and quantitative methods. The qualitative component followed a general inductive approach (Thomas, 2006) and involved open coding. As part of the larger study, all audio recordings were transcribed, unitized (Lincoln and Guba, 1985), and reduced to themes in NVivo™ (Version 12). As part of this process, the research team met to review ~ 10% of the transcripts and established a reliability rate of 96.1%. For the case study, the two participants' transcripts ( $n = 6$ ) were reflectively read and analyzed again with a specific focus on special education.

The quantitative analysis involved conducting a time sampling analysis, a widely used method of observing and recording behavior (Harrop and Daniels, 1986) to track the frequency of participants' web-based actions in 10 s intervals (see Table 1). Once the frequencies of the participants' web-based actions were recorded, percentages were calculated to represent the proportion of each session that the participant engaged in each specific behavior. These were then graphed across the sessions and inspected visually to note any changes over time. Since a limitation of time sampling is that it does not necessarily provide insight into participants' thoughts, it is best when combined with methods such as the virtual revisit think aloud.

## 5. RESULTS AND DISCUSSION

The findings from the analysis revealed both similarities and differences in how Lisa and Amanda approached SDOL. In Section 5.1, the results and discussion are addressed together for each participant. Not only do the findings capture the day-to-day challenges that





**TABLE 1:** (continued)

<b>Action</b>	<b>Session 1 Total N (%)</b>	<b>Session 2 Total N (%)</b>	<b>Session 3 Total N (%)</b>	<b>Overall Total N (%)</b>
Accesses email	0 (0)	0 (0)	0 (0)	0 (0)
Error	0 (0)	0 (0)	0 (0)	0 (0)
Engages in planning activity	0 (0)	0 (0)	0 (0)	0 (0)
Opens resource page	0 (0)	0 (0)	1 (0.3)	1 (0.1)
Accesses personal account	0 (0)	0 (0)	0 (0)	0 (0)

can be characteristic of special education classrooms, but they also provide a picture of what informal PD looks like for two special educators in different contexts.

## 5.1 Professional Learning Goals

Thematic content analysis revealed four types of goals for teachers' professional learning during SDOL: student focused, classroom focused, literacy focused, and pedagogy focused. Goals that were student focused were further broken down as targeting specific student needs or helping students make connections between home and school. Goals that were classroom focused tended to involve targeting a particular grade level, resource, or assessment, which would be beneficial for all students. Goals that were literacy focused targeted planning for literacy instruction and, finally, goals that were pedagogy focused involved seeking out broader educational information on specific issues, filling knowledge gaps, and focusing on teaching structure.

Since Lisa taught a multiple exceptionalities class with children of different ages and abilities, it is unsurprising that her goals across the sessions were student focused, which is in line with Shurr et al.'s (2014) school-based professionalism. Moreover, Lisa's goals became more specific to her students' individual needs over time and her own classroom context.

At the beginning of the first SDOL session, when asked about her goal, Lisa responded that "there's so many different kinds of literacy goals for each child," focusing on all of her students throughout the session. By the second SDOL session, however, Lisa narrowed her focus to two students, deciding to spend the session developing a visual literacy plan for a student with ASD and intellectual disability, and to find resources to support sight word recall for another student with ASD and general developmental delay. During the final session, however, Lisa focused solely on the second student, continuing to search for resources to support his retention of sight words and ability to transfer knowledge.

Unlike Lisa, Amanda's goals were classified differently during each of the three sessions. Amanda's first goal was literacy focused, stating: "I was looking for different ideas on strategies to build reading comprehension." During the next session, Amanda's goal was



their curriculum, including making cross-curricular connections wherever possible. Once again, as Lisa and Amanda monitored their learning, their thought processes were characterized by their own classroom contexts. When describing her goal for the first session, Lisa commented, “I’m going to be looking for some videos here to help me understand a little bit more fully the matters that go into identifying the words in front of you and connecting to what they actually mean for these children.”

When looking at a resource, Amanda also explained, “I’m wanting the students to understand the history behind the residential schools and, in this case, one child’s specific experience. And the history template could be very helpful [for] students in my program and a lot of students with reading comprehension needs struggle with understanding that certain events come before other events.”

As Lisa and Amanda monitored their learning throughout the sessions, they frequently referenced their students’ specific needs, suggesting that their efforts at professional learning were closely linked to their current classroom contexts.

### 5.2.3 Self-Efficacy

Participants were continuously thinking about their ability to achieve a task or reach a goal related to their practice. Strategies related to self-efficacy for SDOL involved goal setting, drawing on their own personal experiences, and reflecting on their own literacy learning.

During her first session, Lisa demonstrated how self-efficacy can be tied to SDOL by posing questions about her practice. Lisa asked, “...just maybe pairing it back all the way to: how do I read?” She continued, “...so, if I can help, if I can take a few steps back and just ask: what does a good reader do? How does a reader read? When you’re reading to someone, what does that look like? When you’re being read to, what does that look like?”

Throughout the session, Lisa continued to ask and seek answers to these questions, returning to the idea of what it means to be a good reader. Like Lisa, Amanda also posed questions that related to her students’ learning. While considering assessment criteria during her third session, Amanda reflected, “I think I need to do a little bit more planning to figure out whether it’s going to be an essay or it’s going to be based on having autism as a superpower or advocating for needs, or is it going to be both?”

The questions that both Lisa and Amanda posed throughout the sessions seemed to be a way of expanding their self-efficacy as well as identifying areas where they wanted to increase their knowledge.

### 5.2.4 Challenges Specific to Special Education

Though Lisa taught a class for children with mixed exceptionalities and Amanda taught a class for those with ASD, both noted that meeting students’ diverse needs was an ongoing consideration for their professional learning. During her second session, Lisa noted,



Amanda also commented, “Our students usually have integration. And this year, because of COVID, [they] don't have that opportunity for integration with the other cohorts.” Such challenging circumstances can have a considerable impact on the ways in which special educators approach their SDOL and PD in general.

### 5.3 Web-Based Actions and Behaviors

Similar to their thought processes, Lisa and Amanda's web-based actions and behaviors demonstrated different patterns across the sessions. Figure 1 provides a visual representation of Lisa's behaviors, and Fig. 2 provides Amanda's. The web-based actions with the greatest frequencies were viewing videos, scrolling, and note-taking; however, the breakdown of their behaviors differed considerably. Lisa spent 30 min viewing videos, often commenting on their quality. Viewing videos represented half of her total time across the three 20 min sessions, whereas Amanda only watched videos during the final session, for a

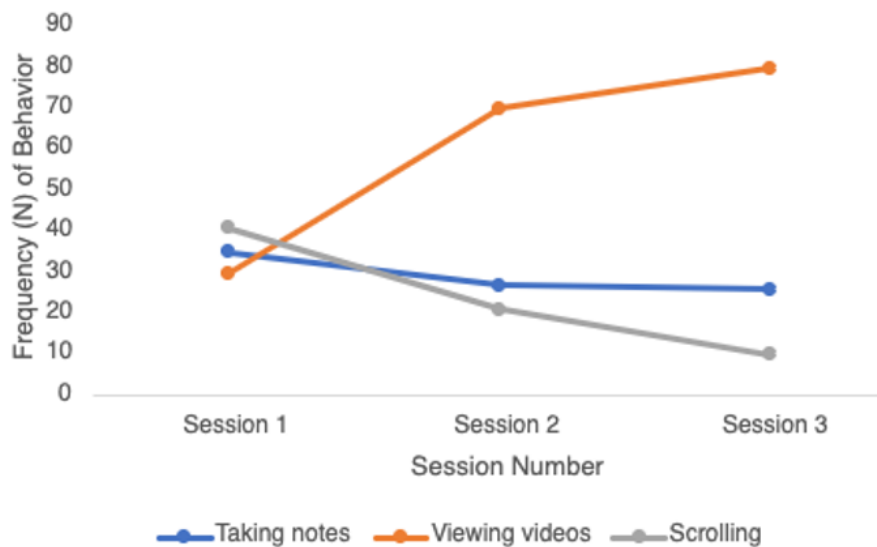


FIG. 1: Notable web-based behaviors for Lisa

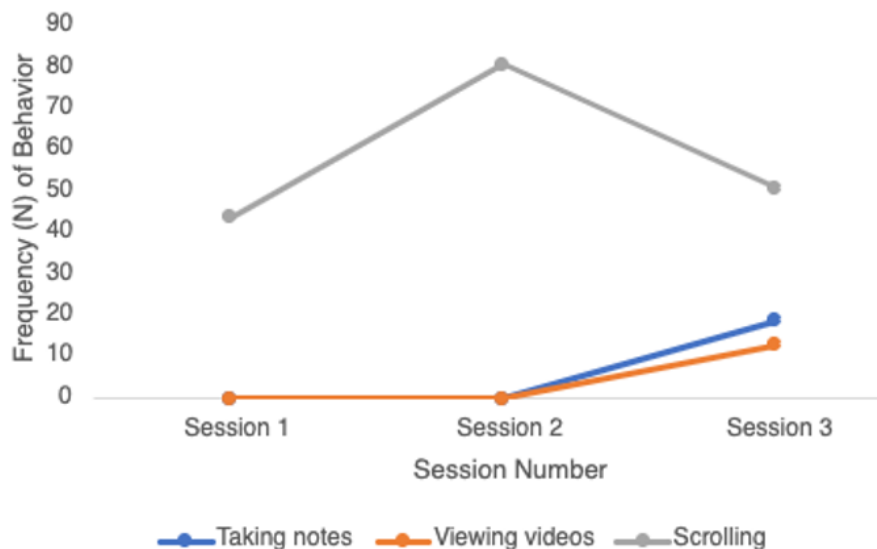


FIG. 2: Notable web-based behaviors for Amanda



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