Late-Career Adults in Online Education: A Rewarding Experience for Individuals Aged 50 to 65

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Abstract

Adults over age 50 are increasingly pursuing online instructional modalities of higher education coursework. While research shows that late-career adults typically prefer traditional, face-to-face instruction, some are embracing the flexibility and convenience inherent in online instruction. This mixed-method study examined both the academic performance and instructional support needs of late-career adults (aged 50-65) in an online course as compared to early-career (aged 21-35) and mid-career (aged 36-49) adults. Surprisingly, results of the study indicate that not only are late-career adults satisfied with the online delivery, but they actually find the experience to be more rewarding than their early- and mid-career peers despite the differences in technical abilities. Additionally, results reveal that for late-career adults to be successful in online classes, they initially require higher levels of technology support and digital interaction. However, after receiving the technical assistance, they perform as good as or better than their younger peers.

Keywords: postsecondary education, older adults, continuing education, online instruction, distance education

Introduction

> *It is an easy task to reflect back upon an experience that was as positive as this was. It began with apprehension, the first class I had taken in many years, uncertainty about the qualities of the materials and some indecision as to wanting to dedicate the amount of time necessary to make the process meaningful. It is ending with a desire to continue. This has been a rewarding experience and has been a benefit to my role as teacher.*

This was written by a 58-year old male student on an end-of-course evaluation of an online graduate course.

Literature Review

Information from the U.S. Census Bureau (2008) reveals that the overall population in the United States is aging, and their projections show that in the next few decades the fastest growing segment of the population will be older adults. This holds true for the workforce as well, with the number of workers over the age of 55 increasing at a higher rate than any other age group (Alley & Crimmins, 2007). Additionally, we know that our economy and workforce demand life-long learners who continually update and upgrade skills (Shen, Pitt-Catsouphes, & Smyer, 2007), and that late-career workers value workplace lifelong learning (Fredericksen, 2006).

Despite the emergence of the "late-career student," there is scant research on the educational needs and performance of students ages 50-65 in higher education (Paulson & Boeke, 2006). Interestingly, the American Council on Education recently published research results entitled *Reinvesting in the Third Age* that identified the need for higher education to focus more on individuals aged 50 and older (Lakin, Mullane, & Robinson, 2007 & 2008). Recommendations from this focus group research suggested that

older adults prefer education "skill-ettes" (i.e., short, specialized instruction focused on a particular need) and colleges should learn more about the interests and needs of this age group. This is consistent with the finding that late-career workers possessed positive attitudes toward learning, but only if it was relevant and helped them do their jobs better (Fuller & Unwin, 2006).

To compound matters, higher education is experiencing a shift from traditional face-to-face instruction to fully online courses (Grant & Thornton, 2007; Rose, 2009). Online enrollment continues to rise rapidly with over 20 percent of students taking online courses (Allen & Seaman, 2008). It is expected that this shift in learning modalities will become even more prevalent in the next decade, so to maintain credentials and engage in life-long learning, late-career adults will have little choice but to attempt online coursework. This online interaction is second nature for digital natives (i.e., those who grew up with computer technology), but it requires new learning for digital immigrants (Prensky, 2001). Additionally, this shift in instructional formats implies that instructors must follow the process of interaction design to create an effective environment for diverse learners in their online coursework (Preece, Rogers & Sharp, 2002; Tallent-Runnels, Thomas, Lan, Cooper, Ahern, T.C., Shaw, et al., 2006). To identify these learning needs, instructors will need to conduct an analysis of necessary technology support and assignment options that match the learning styles of their course participants.

While late-career adults are becoming more technologically savvy, these digital immigrants are still reluctant to take online coursework. In 2007, AARP reported that most adults (69%) aged 50 to 64 used the Internet; however, they rarely participated in formalized online learning. When asked why they did not participate in online coursework, older adults most often cited poor computer skills and loss of face-to-face connections as the primary reasons (Lakin et al., 2008). Contrary to the research, this study found that more than a third of all students in the online graduate course *Introduction to Transition Education and Services* were late-career adults. The characteristics of the students aged 50 to 65 and their learning outcomes from the course are the focus of this study.

Methods

This study examined the learner characteristics, academic performance, and satisfaction of late-career teachers (aged 50-65) in an online graduate course. Research questions included:

1. Why did late-career adults choose to take this online course?
2. What level of content and technology knowledge did participants have prior to the online course?
3. How did late-career adults perform in this online course?
4. What level of technology support was necessary to facilitate the learning of late-career adults in the online environment?
5. Were late-career adults satisfied with the online course content and instructional methods?

Setting and Content

The asynchronous online graduate course, *Introduction to Transition Education & Services* was designed for secondary special educators who support students with disabilities in high school. The course was the first in a series of five online graduate courses, each worth 1 graduate credit hour (totaling 5 graduate credits) at a Midwestern research university. Employing a cohort model, course participants advanced through the series together, with research-based interaction design and instructional support components embedded into each course. These included: (a) a syllabus that outlined all assignments, expectations, and due dates; (b) detailed technical assistance instructions with screen shots; (c) structured discussions with a rubric posted on the course website; (d) a forum to post course questions; (e) content and media options that addressed a variety of learning styles; (f) student choice in application activities that related the content to their teaching; and (g) a reflection and evaluation of the instruction and learning experience that was used to continually enhance the instruction and learning environment. This standardized format enabled learners to master the learning format during the first course and then continue to use these newly-acquired skills in the subsequent courses.

As the first course in the series, *Introduction to Transition Education & Services* was offered during the fall and summer semesters using the open-source course management platform Moodle (http://moodle.org/). One week prior to the start date, students received access to the course and login instructions so they could explore the website freely. The course website provided students the syllabus, grading rubric, information about technical formats, and all necessary resources needed for successful completion. Students submitted all assignments on the course website and e-mails could be sent to the instructor

through the website or via students' personal e-mail accounts.

Participants

In 2007-2009, 136 graduate students completed *Introduction to Transition Education & Services*. Two state Departments of Education (one Midwestern and one Eastern State) offered limited stipends to high school special education teachers in their state who chose to take the course. The course was customized with state-specific content for the cohorts in these states. Other participants enrolled online through the university's continuing education division and paid full tuition. The results of this study reflect the data from the seven cohorts of students who participated in *Introduction to Transition Education & Services* between 2007 and 2009 (see Table 1).

Table 1: Cohorts

Year	Cohort	Number of Students	Percentage of Students aged 50 and above
2007	State A, Cohort 1	17	53%
2008	State A, Cohort 2	28	43%
	State B, Cohort 1	19	26%
	National, Cohort 1	13	46%
2009	State A, Cohort 3	24	38%
	State B, Cohort 2	23	26%
	National, Cohort 2	12	33%
Total		136	38% (51 students)

While the program did not intentionally recruit late-career adults, 51 individuals aged 50-65 chose to enroll. These students were primarily female (82%) and the majority held a master's degree or higher (67%). Job titles of these older adults included: special education teacher (30), transition specialist (7), related-services provider (6), administrator (3), college faculty (2), community agency consultant (2), and parent of a child with a disability (1). Most of these individuals had a long-term career in the field of education (i.e., 74% for 10+ years, 16% for 7-9 years, 6% for 4-6 years, and 4% for 1-3 years).

Measures

Several quantitative and qualitative measures were implemented throughout the online graduate course to collect background information on the participants and assess their change in knowledge, attitude, and skill. Furthermore, data were archived throughout the course to continually improve the course content and instructional strategies. These measures are described next.

Demographic Survey. Prior to starting the course, participants completed a survey that gathered demographic information as well as their use of and comfort with technology. Descriptive and comparative analyses were used to develop a detailed picture of the course participants.

Competency Survey. The competency survey was based on the transition specialist indicators identified by the Council for Exceptional Children's Division on Career Development and Transition (2000). Participants were asked to rate their current aptitude on 40 indicators using a 4-point Likert scale. This pre-assessment survey enabled course content to be tailored to meet the needs of the participants.

Case-based Learning Pre/Post Assessment. During the second week of the course, participants completed a case-based learning experience on transition education compliance and best practice (Morningstar, Gaumer Erickson, Lattin & Wade, 2008). This learning experience utilized performance-based assessments that required participants to apply their learning to case study examples and their own students. The pre/post assessment consisted of a 20-item multiple-choice test on key points of the Individuals with Disabilities Education Act (2004).

Satisfaction Survey. After completing the case-based learning component, participants were asked to rate their satisfaction with the interactive content and online learning in general on a 20-item survey using a 5-point Likert scale. Questions on this survey evaluated the time required to complete the learning experience, comfort with technology, components of the case-based learning experience that were most beneficial, and future uses for the information gained through the learning experience.

Discussion Forums. Asynchronous discussions were utilized during two of the four weeks of the course. A topic in the first week's discussion asked participants to introduce themselves and share their hopes and concerns related to the course. In addition to the week-long discussion, the instructor asked participants to post their questions about course content in a forum titled, "General Class Questions." This enabled the instructor to post responses that could be accessed by all course participants. For this study, discussions from both *Week 1* and *General Class Questions* were analyzed. These qualitative data were collected, printed, and coded to reveal themes related to the comfort with technology and reasons for pursuing the course. It was then quantified revealing the number of posts for each course participant related to the themes.

E-mail Communication. All e-mail communication with the instructor was archived. While many students posted their questions to the *General Class Questions* discussion forum, others felt more comfortable sending an e-mail directly to the instructor. These e-mails were coded through the same procedure as described above for the discussion forums.

Course Reflection. During the last week of the course, participants were asked to reflect on the course content. Specifically they were asked to:

> Write a 1-2 page single-spaced reflection on this online learning experience. Be sure to identify: (a) information, resources, & activities you found most useful, (b) how you will use the information to improve transition services in your school or community, and (c) suggestions for improving this online learning experience.

A random sample of twenty-five reflections from participants aged 50-65 were coded and themed to identify the course content that they found to be most beneficial and the application activities they planned to undertake based on their learning. Additionally their suggestions for improving the online experience were analyzed to identify overarching support needs of this age group.

Quantitative data analyses consisted of descriptive statistics (i.e., mean and standard deviation), analysis of variance (ANOVA), and paired-samples *t* tests. For all analyses, the course participants were divided into three groups (early-career participants aged 21-35; mid-career participants aged 36-49; and late-career participants aged 50-65). ANOVA procedures evaluated the relationship between factors and the dependent variable (e.g., the relationship between technology skills and the age of participants). Because each ANOVA included variables with more than two levels, they were followed with pairwise comparisons (i.e., Dunett's C if variances were unequal or the least significant difference (LSD) procedure if variances were not statistically different). A paired-sample *t* test evaluated the performance across time with two data points (i.e., case-based instruction pre/post test performance). The a priori level of 0.05 was set for all statistical tests (Green & Salkind, 2003).

Results

Throughout the results section, course participants are compared using three groups. Those aged 50-65 are termed late-career; aged 36-49 termed mid-career; and aged 21-35 termed early-career. Because the vast majority of individuals who participated in the course were practicing teachers, these employment terms accurately represent the participants.

Why did late-career adults choose to take this online course?

When asked why they chose to take the course, late-career participants cited two main reasons: 1) their interest in the topic and 2) the ability to earn recertification credits. As one student noted, "I see the courses as a great opportunity to learn knowledge and skills that will better equip my students to meet their post-secondary goals." Others described the appealing layout, "This seemed to be a good way to learn more about the field in an efficient and timely manner" and "I like the opportunity to gain new information in a short period of time. I also like the intensive focus on one topic at a time."

What level of content and technology knowledge did participants have prior to the course?

The subject-area competency was similar across all age groups. When asked to rate competency on 40 transition-related skills, the mean scores of late-career participants ranged from 1.90 (not prepared) to

3.70 (very prepared), with an average rating of 2.5 (somewhat prepared). This was similar to their mid- and early-career counterparts. These means reveal that on average the course participants, regardless of their age, felt that they had a moderate level of competency related to the course content prior to enrolling in the course (see Table 2).

Thirteen of the 51 late-career adults (25%) had previously completed an online course. A one-way analysis of variance was conducted to evaluate the relationship between the number of online courses taken and age of the student. Error rates on follow-up analyses were controlled for using the LSD approach. These analyses found that previous online course-taking of late-career participants was significantly lower than the online course-taking of early-career participants (see Table 2). The online course-taking for mid-career participants was between that of early- and late-career participants and thus not statistically different from either group.

Late-career adults identified having a moderate level of technology skills and used technology moderately in their daily work. While their technology usage rated at the same level as early- and mid-career participants, the mid- and late-career participants felt less experienced technologically than the early-career participants (see Figure 1). A one-way analysis of variance was conducted to evaluate the relationship between technology skills and age of the student. Because Levene's test found that equal variance could not be assumed, error rates on follow-up analyses were controlled for using the Dunnett C approach. There was no statistical difference between the technology skills of mid- and late-career participants, but both groups rated their technology skills statistically lower than the early-career participants (see Table 2).

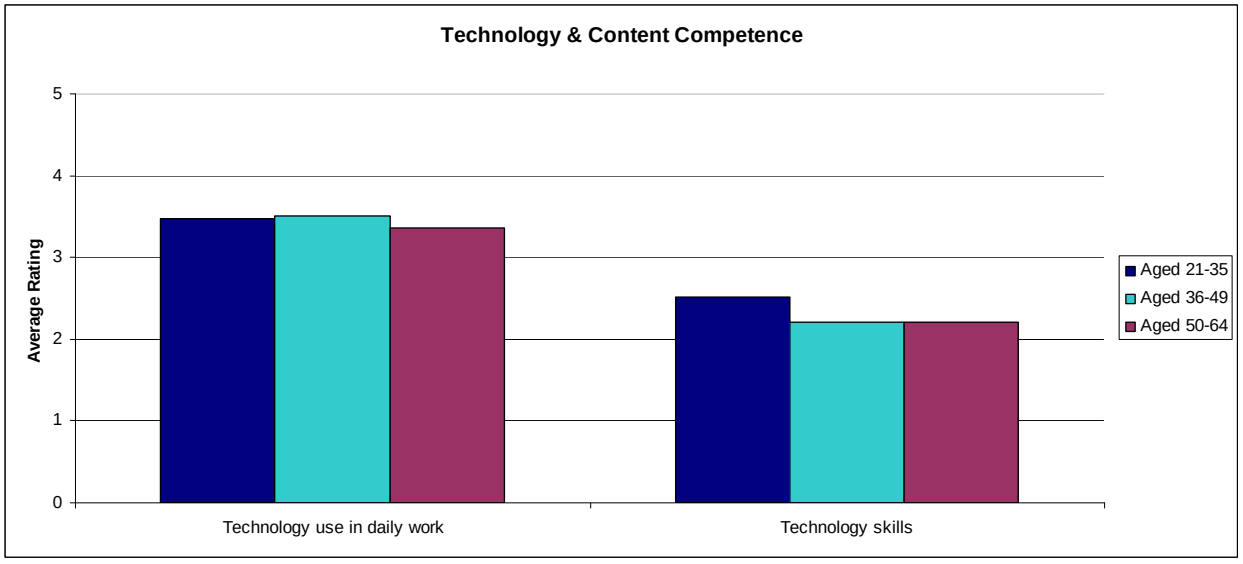

Figure 1: Technology Use and Skill

How did late-career adults perform in this online course?

Late-career adults had high levels of success in this online course. All (100%) late-career participants successfully completed the course requirements. Students receiving graduate credit were graded on an A-F system with 22 earning an A (90-100%) and 2 earning a B (80-89%). Other participants chose to earn Continuing Education Units (CEUs) with a pass/fail system through which the remaining 27 participants earned a passing grade.

The case-base learning pre/post assessment reinforced the data from the competency survey that identified similar levels of proficiency in the subject area for all age groups. On the pre-test, late-career participants averaged 62% and increased their scores to 80% on the post-test. No significant differences were found in either the pre- or post-test scores when compared to their younger counterparts. A paired-samples t-test was conducted to evaluate the increase in knowledge from the pre-test to the post-test. The results for late-career participants indicated that the mean score on the post-test (M=80.42, SD=11.56) was significantly higher than the mean score on the pre-test (M=61.59, SD=15.57). Results for

mid- and early-career participants also showed significant increases in knowledge.

What level of technology support was necessary to facilitate the learning of late-career adults in the online environment?

The discussion forum and e-mail analyses revealed that students aged 50-65 ask more technology-related questions than their younger counterparts. These questions included asking for directions regarding posting comments, submitting assignments, and accessing online resources. Approximately 40% of the late-career adults asked a technology-related question. An ANOVA followed by a Dunett's C test revealed that late-career participants asked significantly more technology-related questions than early-career participants. Results for mid-career participants were not significantly different from either of the other age groups (see Table 2). Other discussion forum and e-mail analyses did not reveal significant differences among the age groups. The themes included asking course content questions, expanding learning by discussing other transition-related topics, and providing technology-related support to peers on the discussion forums.

Were late-career adults satisfied with the online course content and instructional methods?

Some variance was identified among the age groups on the satisfaction survey. Late-career participants spent more time completing the case-based learning experience, but they also gave higher ratings to the following statements: (a) the case-based learning experience kept my attention and interest; and (b) the case-based learning experience could be an important resource to me in the future. These items on the satisfaction survey were analyzed using a one-way analysis of variance. Post-hoc procedures included the LSD approach when variance was assumed (i.e., the case-based learning experience kept my attention and interest) and the Dunnet's C approach when variance could not be assumed (i.e., the case-based learning experience could be an important resource to me in the future). The analyses revealed that the ratings of mid- and late-career participants were significantly higher than those of early-career participants when asked if the case-based learning experience kept their attention. On the item that asked if the case-based learning experience could be an important resource in the future, the ratings of late-career participants were significantly higher than those of early-career participants. The ratings of mid-career participants fell between the early- and late-career participants, and thus were not statistically different from either group (see Figure 2). Table 2 provides mean scores, standard deviations, and *p*-values.

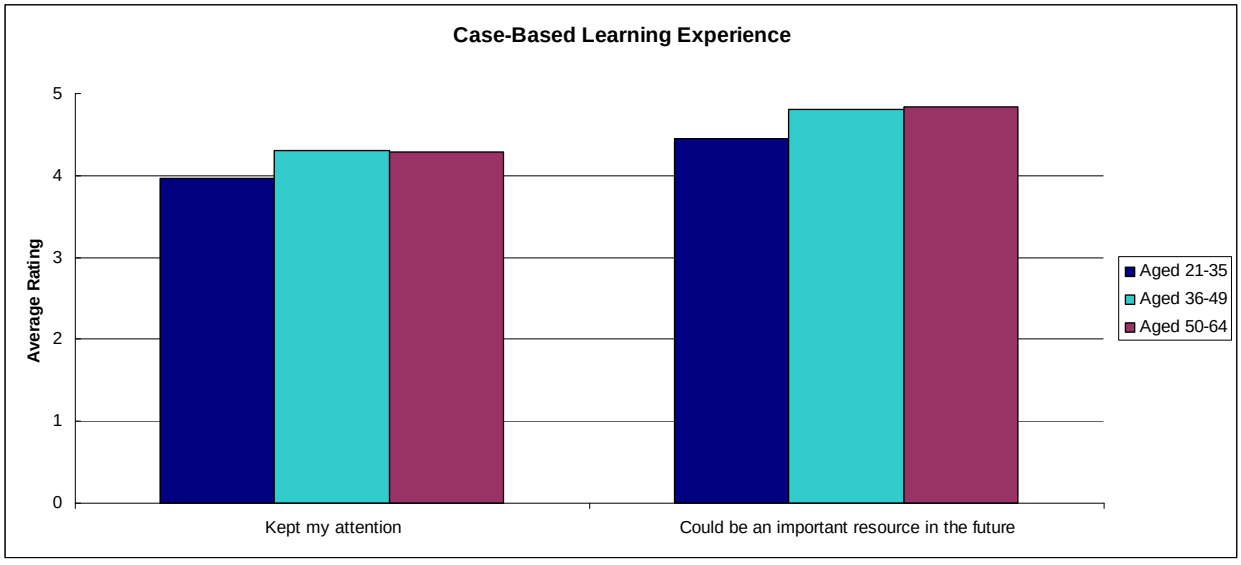

Figure 2: Satisfaction with Case-Based Learning Experience

Upon completion of the course, participants were asked to reflect on the course content. These reflections revealed that participants aged 50-65 highly valued the applicability of the course content to their jobs and the array of resources provided throughout the course. All late-career participants sampled identified the resources (articles, videos, and website) as contributing to their learning. Most also felt that the case-based learning experience (76%) and discussions (68%) were beneficial. These participants expanded on the information by identifying ways they would use their newly-acquired knowledge.

Responses included disseminating information to colleagues and parents, improving the transition education processes for students, and advocating for increased collaboration and additional services in schools.

> "I have been utilizing what I have learned as I have assisted students in their transition planning. It has been invaluable, enriching experience. I have allowed the students to take more control so they feel more confident."
>
> "I have printed out the articles and some of the information from the websites, and have incorporated them into a note book with information that can be used in the transition planning process. I have also notified my colleagues that I have this information, which will be located in our special education office/library. I have also e-mailed a list of websites to them."
>
> "I would also like to begin sending out brochures to parents or guardians before the IEP [Individualized Education Program] meetings so that they come to the meetings better informed."
>
> "I actually called my Special Education Director to tell her, 'This is the first time transition goals for a student felt individualized and real!'"
>
> "My e-mail has been busy sending new and seasoned special educators in the school bits and pieces of this class."
>
> "I am already using the information garnered in this course in my IEP meetings."

When asked how they would improve the online learning experience, half of the late-career adults (50%) reiterated their satisfaction with the course. Others identified technology, time commitment, and discussion forum strategies.

> "As to areas of improvement, my more traditional habits of learning cause me to seek out more topic specific discussion forums."
>
> "Time commitment to do the activities continues to be a concern to me, but the information is invaluable."
>
> "The lack of programs to view some of the videos is a bummer but being able to read the text is some consolation."

Overall late-career adults came into the course with moderate levels of prior knowledge and showed stellar performance on all assignments. They required higher levels of technology support, but once they became proficient in the technology requirements, they found the course content and format to be highly beneficial and applicable to their work. This satisfaction was evident in the enrollment rate of the next course with 94% of the late-career participants in the *Introduction to Transition* course enrolling in the second online course in the series.

Discussion & Implications

The course was not designed for or specifically marketed to late-career adults, but many individuals chose it as their first online learning experience. While one study found that 25% of teachers in the United States are over the age of 50, 38% of participants in this online course were in that demographic (Miller, Sen, Malley, & Burns, 2009). This reaffirms research that older adults prefer highly specific, short-term learning opportunities based on their interests and job requirements (Fuller & Unwin, 2006; Lakin et al., 2008; Shen et al., 2007; Tallant-Runnels, Thomas, et. al., 2006).

Teacher re-certification requirements and employer expectations also encouraged participation in this professional development opportunity. Teachers must participate in professional development throughout their teaching career, but they typically have extensive flexibility in the professional development options they choose, including school and district in-services, workshops, conferences, and coursework (National Center for Education Statistics, 1999). All course participants could have met re-certification requirements without participating in online training, but it is unlikely that face-to-face training options would have been as specialized as that provided in this course. While the teacher re-certification requirements should be considered when generalizing the results of this study, it's important to note that this online course was sought out specifically by late-career teachers to meet these requirements.

These late-career adults used technology for their work (primarily teaching) at similar levels as their younger colleagues, but they reported that they did not feel as skilled in technology use. This was substantiated by both their self-ratings of technology skills and use, as well as the number of technology-related questions posed during the course. While many of the late-career adults entered the course

concerned about their technology skills, they were willing to work through the barriers with the instructor because they valued the information. This interaction required higher levels of "invisible" labor by the instructor (Blair & Hoy, 2006), but it also produced an online learning community that extended the learning opportunities within the course (Grant & Thornton, 2007).

Table 2: Performance and Perception by Age Group

	Participants Aged 21-35		Participants Aged 36-49		Participants Aged 50-64		
	M	SD	M	SD	M	SD	*p*
Number of online courses	2.12	2.01	1.28	1.85	1.12	1.79	0.05
Technology use in daily work	3.48	0.51	3.50	0.51	3.36	0.53	0.37
Technology skills	2.52	0.51	2.20	0.69	2.20	0.49	0.03
Subject-area competency	2.53	0.39	2.55	0.42	2.50	0.30	0.83
Satisfaction – Case-based learning experience kept my attention	3.97	0.73	4.30	0.61	4.28	0.57	0.05
Satisfaction – Case-based learning experience could be an important resource in the future	4.45	0.83	4.80	0.41	4.84	0.37	0.01
Number of technology-related questions	0.17	0.45	0.49	0.84	0.88	1.51	0.01

It is interesting to note that late-career adults gave higher satisfaction scores to some components of the course, specifically the case-based learning experience that required participants to read research-based content and then apply the information to case study examples. Hypotheses for these higher ratings could be that digital immigrants have a high appreciation for content that is directly applicable to their jobs or that digital natives expect more active interfaces (i.e., game-like atmospheres) in online environments (Zemke, Raines & Filipczak, 2001). In addition, the case-base learning followed a standardized format with a balance of content and application. This "learning-while-applying" approach has been found to be effective for late-career learners (Charness, Czaja, & Sharit, 2007, pp. 233).

Additional research is needed on the perceptions and performance of late-career adults in online learning environments. Because these individuals prefer highly specialized courses, additional data need to be collected by institutes of higher education on their continuing education course participants. Older adults are continuing to grow as a market niche in education, so to maintain a competitive edge, institutes must identify the needs, interests, and necessary online supports of this age group.

Institutions of higher education should reflect on their online course content and delivery systems. The course in this study was unique in that it was completed over a four-week duration. Additionally, it was content-specific with direct application to the job requirements of the participants. This level of specificity and application was found to be highly valued by late-career adults. As institutions of higher education expand their online course offerings, they should undergo a rigorous evaluation process addressing the context, interactions, and desired outcomes for students (Preece et al., 2002; Ruhe & Zumbo, 2009;

Scanlon, Jones, Barnard, Thompson, & Calder, 2000). Foresight in course design can then lead to higher levels of learning for individuals of all ages.

Finally, the "invisible" labor of faculty teaching online courses must be understood and valued. When the instructor of the course in this study was asked about instructional time, she responded:

> Even after teaching this course seven times, it still requires more of my time than any face-to-face course I teach. In addition to updating assignments and grading, I access the course at least five days per week to respond in weekly discussions and to answer questions from students. Once students understand the course layout and technology requirements, my instructional time decreases substantially in the four courses that follow *Introduction to Transition Education & Services*.

This is aligned with research that identifies student-staff contact and prompt feedback as core principles in effective online teaching (Grant & Thornton, 2007; Stein & Glazer, 2003). Many students, especially late-career students, could benefit from an introductory course that exposes them to the online learning environment and subject-area content prior to participating in advanced online courses.

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