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The Impact of Emergency Online Learning on D/Deaf College Students' **Experience of Social Isolation, Self-Efficacy, and Well-Being**

M. Elizabeth Bowman, Teresa Crowe

Article Info	Abstract
Article History	During the 2020 COVID-19 pandemic, many universities in the United States
Received:	converted face-to-face classroom teaching to remote, online based learning
13 June 2022	formats. Gallaudet University was among these universities and faced particular
Accepted: 09 December 2022	challenges due to the need for visually accessible classrooms for d/Deaf students.
	Because college students are primarily made up of early and emerging adults, and
	d/Deaf college students have been shown to have better academic success when
	social connection is fostered, the current study sought to determine how d/Deaf
Keywords	students at Gallaudet University were emotionally impacted by the change to
Deaf	online learning during the COVID-19 pandemic in 2020. The research question
COVID-19 Online learning	for this study was: How did the COVID-19 pandemic and subsequent emergency
Experiences	switch to online course participation influence college students' experience of
Education	well-being, self-efficacy, and loneliness? Results indicated that overall, d/Deaf
	students at Gallaudet university had positive emotional adjustment during this
	transition, despite challenges. Discussion describes within-group differences by
	age and how the University supported students and the campus community to
	encourage this positive outcome.

Introduction

The COVID-19 pandemic affected university operations during the year 2020 throughout the United States. Faceto-face classroom teaching was often converted to online platforms including Zoom or Blackboard, with varying impacts on students' academic and social experiences (Crawford, et al., 2020). College students are usually made up of primarily individuals who are in the emerging and young adult phases of development, a time characterized by instability and exploration in terms of identity, education, career, and social relationships (Arnette, 2000; Konstam, 2016). It is therefore important that college students are given opportunities to socialize in order to facilitate the development of an adult identity and independence, whether through online or face-to-face interactions on campus.

Social connection is all the more important for d/Deaf college students who may face barriers to communication, and therefore socialization, in mainstream college environments even with interpreter support (Foster, 1988; Stinson, Liu, Saur, & Long, 1996). In the current article, to avoid presumption of an individual's personal cultural identity, the capitalized (D)eaf (referring to a cultural identity) and lowercase (d)eaf (meaning physical hearing loss) will be incorporated by using d/Deaf to describe the population of d/Deaf college students in the study.

Gallaudet University is one the few colleges in the United States that creates a space for young adults in college to study and socialize in a culturally and linguistically immersive environment. In the fall semester of 2019, there were approximately 1,722 students enrolled at Gallaudet University, including undergraduate, graduate, professional certificate, and non-degree seeking students (Gallaudet University, 2020). Gallaudet University has a primarily face to face classroom model with visually accessible classroom and campus designs. This is in line with the university's bilingual mission which emphasizes the accessibility of both English and American Sign Language (Gallaudet, 2007), which can be challenging in primarily written, asynchronous online courses, or those which do not occur in the same place or time. In the academic year 2018-2019, 1404 face-to-face comprised the majority of the total 1629 courses offered by the University. Only 186 courses were fully online and an additional 39 were hybrid courses (Gallaudet, 2020).

In the face of the COVID-19 pandemic, Gallaudet University along with many other universities in the Washington, D.C. metropolitan area was required to convert all courses during the spring and summer 2020 semesters into fully online formats (Crawford, et al, 2020). While some courses were already offered online, a majority of the courses were converted to Zoom-based teaching formats; students were asked to return home and to vacate campus in the interest of safety. Face-to-face social activities on campus were also converted to online format or cancelled.

In the predominantly face-to-face, linguistically accessible environment at Gallaudet University, there is a great emphasis placed on social connection, community, and interpersonal support. Because of the conversion to online learning, this environment was markedly different, creating the possibility for gaps in these types of connections and support for students. Further, social distancing constraints during 2020 led to an inability of students to participate in social activities on campus such as sporting events, graduation, and other opportunities for ASL rich environments.

Because these changes led to a need for reduced in-person social connection, and the literature emphasizes the need for socialization among college students, particularly those who are d/Deaf, there was a concern that this reduced social interaction, or social isolation, would lead to an affective experience of loneliness and reduced mental well-being. Further, given the online learning platforms, it was unclear how students would feel about their ability to learn and integrate their coursework effectively.

Literature Review

Emerging and young adults, (i.e. those between the ages of 18-25 and 26-35, respectively) experience a great deal of exploration in romantic and platonic relationships, career and individual identities, and overall worldview (Arnette, 2006; Konstam, 2016). Social interaction is critical to development during these formative years of adulthood, which often occurs during college matriculation. Many developmental theorists have posited that identity formation occurs largely in the context of social relationships, however recently this has been expanded

to emphasize the impact of socialization on identity during emerging and young adulthood (Swenson, et al., 2008; To & Sung, 2017). In a study of community college students, Katsiaficas (2017) found social connectedness to a primary element of defining oneself as an adult. Lack of social connection, or the presence of social isolation, can have an impact on the emotional and mental well-being of emerging adults as peer relationships and the need to form non-familial bonds are particularly important during this time (Russell, et al., 1978; Swenson, et al., 2008). As college students develop a sense of identity and transition into their post-college life, peer support and social relationships are critical to overall mental health and a subjective sense of well-being, meaning having an overall positive, happy or desirable feeling about one's life and a sense of quality of life (Menvedev & Landhuis, 2018; Schnyders & Lane, 2018; To & Sung, 2017).

Few studies have examined the experiences of emerging adults who are d/Deaf and in a culturally and linguistically accessible environment, such as Gallaudet University. Deaf college students are also a diverse group which may include various cultural, racial, sexual orientation, gender, and hearing status identities (Knoors, 2016). The developmental goals of this population are similar to hearing peers, including gaining independence through employment and economic stability as well as developing lasting romantic and platonic relationships with non-family members (Lukomski, 2011). Attending a college such as Gallaudet University in Washington D.C. or the National Technical Institute for the Deaf (NTID) in Rochester, New York, create more opportunities for these social relationships to develop as d/Deaf college students in these environments have access to a fully immersive American Sign Language environment.

Language access is a critical aspect of creating social connections. Specifically, when d/Deaf college students are able to communicate with others without intermediaries, such as interpreters, social connectedness can form and students often report higher life satisfaction and well-being (DeFillipo, 2004; Lukomski, 2011). Further, during emerging adulthood the presence of these strong social bonds allows the individual to fully engage in the mastery of developmental milestones that emphasize autonomy and independence.

It is commonly known that d/Deaf individuals often experience social isolation while growing up in hearing families, attending mainstream hearing schools, and interacting with other non-signing environments (Charlson, et al., 1999; Foster, 1988; Perry, 2018; Sheppard & Badger, 2010). Social isolation is defined as "a deprivation of social connectedness... [specifically] the inadequate quality and quantity of social relations with other people at the different levels where human interaction takes place (individual, group, community and the larger social environment)" (Zevelata, Samuel, & Mills, 2014, p.5). In studies of d/Deaf college students the presence of face-to-face social activities on campus has been shown to promote a sense of overall quality of life (Defillipo, 2004), resilience (Crowe, 2018), and retention in the face of stressors (Stinson, et al., 1987).

Deaf college students have shown to have similar reports of overall well-being as hearing peers (Crowe, 2018; Meyer & Kashubeck-West, 2011). Further, having access to and the support of on-campus resources such as tutors, peers and faculty has been shown to influence academic success, confidence in self-efficacy, and positive relationships on-campus (Albertini, et al., 2011). College students feeling connected is clearly an important overall element of the college experience, particularly for d/Deaf students who may have faced linguistic and social

isolation in the past. This makes online learning more tricky in universities which serve a primarily d/Deaf population. While some studies of hearing college students have shown that a mixed online and face-to-face course curricula can be beneficial to more tech-savvy students, this experience may not always be transferable to d/Deaf college students given the emphasis on social connection in the college environment as it relates to well-being and retention (Defillipo, 2004; Shea & Bidjerano, 2014; Stinson et al., 1987). In a dissertation on d/Deaf college students' social identities in mainstream online learning environments, O'Dell (2019) found that in asynchronous discussion boards, d/Deaf students can form social connections when there is substantial opportunity for emotional expression actively facilitated by the instructor and engaged in by all members of the discussion board. However, the study also found that students had mixed perceptions of online learning as compared to face-to-face classrooms due to the higher potential for social isolation.

The use of other modalities such as YouTube, Zoom, and Google Meet, among others, could potentially meet d/Deaf college students' desire for social connection in the classroom. Deaf emerging adults who report a mixture of both online and offline friendships show increased social connection and an overall higher sense of well-being (Blom, Marschark, Vervloeb, & Knoors, 2014). Additional study is needed to determine which specific online education modalities enhance both the academic and social experiences of d/Deaf college students.

In March of 2020, Gallaudet University was mandated to convert all face-to-face courses to online instruction; students were required to move out of the dorm living environments. This is not unprecedented in academic history; however, the length of time and scale of the impact of the COVID-19 pandemic has been substantially higher than in the past. For example, the H1N1 influenza, or swine flu, epidemic in the United States forced several universities to close during the academic year 2008-09 due to student safety issues. In the case of the swine flu, the university communities adapted college operations, which resulted in students ultimately gaining relational trust in the academic institution. Communication with university administration during the crisis helped students to adjust to the new operations and health promotion procedures (Kim & Niederdeppe, 2013; Wheaton et al., 2012).

The COVID-19 pandemic has had large scale impacts on social connectedness in the United States due to the need for social distancing in order to reduce the spread of infection. How college students emerge from a crisis such as this largely depends on their ability to retain some social connection through which to make meaning of the negative life event. When emerging adults are able to have social connection in the face of challenges, they are more likely to be able to make meaning of the situation and experience positive growth (Gutierrez & Park, 2015).

The presence of face-to-face learning environments is important to d/Deaf emerging adult college students' connections to social relationships and communities, which can influence well-being and sense of social isolation. Therefore, the current study seeks to investigate experiences of d/Deaf college students at Gallaudet University with regard to social isolation, well-being, and psychological, social, and cultural effects as a result of the shift from face-to-face classrooms to fully online learning during the COVID-19 pandemic. Serving this purpose, the following four research questions guided this study:

1. What were students' perceptions about switching from traditional learning to fully online education

during the pandemic?

- 2. Were there significant differences between students' perceptions of ease with switching to online education and scores on well-being, loneliness, and self-efficacy during the pandemic?
- 3. Were there significant differences between students' ages and scores on well-being, loneliness, and self-efficacy during the pandemic?
- 4. What feedback do students have about the process of switching from traditional learning to online learning during the pandemic?

Method

Participants

The sampling frame included all students currently enrolled at Gallaudet University totaling 1,523 (Gallaudet University, 2020). The sample included 84 d/Deaf, hard of hearing, and hearing college students. There were 65 self-identified d/Deaf students, which comprised 77.4% of the sample, followed by 10 hard of hearing students (11.9%), and nine hearing students (10.7%). There were two d/Deafblind students (2.4% of the sample). The sample included 49 (58.3%) female students and 33 (39.3%) male students; two students (2.4%) identified as non-binary. The majority of students were between the ages of 18 and 34 years old (n = 74; 88.1% of the sample). Most were Caucasian (37; 44.0%), followed by Latina/o/x (17; 20.2%), African, African-American, or Black (14; 16.7%), Asian or Asian American (9; 10.7%), and biracial (7; 6.7%). The majority were from the United States (72; 85.7%). Most were undergraduates (52; 61.9%) followed by either master's level students (30; 35.7%) and doctoral students (1; 1.2%).

Measures

The questionnaire invited students to answer questions related to their academic and life experiences and coping strategies as a result of the COVID-19 pandemic. The survey instrument included 25-items, including three openended questions that asked participants about their best and most challenging experiences as well as one-item for additional comments.

Demographics

Demographic variables included: academic class rank, race/ethnicity, geographic location of primary home, age, employment, hearing status, disability (i.e., d/Deafblind), gender identity, first knowledge about the spread of COVID-19, reactions and experiences to emergency online teaching, academic performance pre- and during the pandemic.

Well-Being

Well-being was measured using four-items that asked participants to rate their levels of happiness over the spring semester in 2020: lowest level of happiness, highest level of happiness, general happiness, and level of happiness

at the present time. Participants ranked their happiness on a Likert scale ranging from 1 (extremely unhappy) to 9 (extremely happy) (VanderWeele, et al., 2020). Though the author of the scale does not indicate the cut-off scores, the researchers used the following cut-off scores: Unhappy (1 - 3); neither happy nor unhappy (4 - 6); happy (6 - 9). Cronbach's alpha was used for comparisons of the reliability of the four-items together. Cronbah's alpha for the four-item scale was .617. The first item, "over the past semester, what is the LOWEST level of happiness did you experience?" performed poorly, so it was removed from the scale. Thus, the remaining three-items were used to measure well-being and yielded a Cronbach's alpha of .771.

Self-Efficacy

Self-efficacy was measured by the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). This scale was designed to measure an individual's coping ability with daily living. It is a 10-item instrument with Likert scale responses from 1 (not true at all) to 5 (very true). Respondents respond to statements about how well they cope with problems, such as "I can always manage to solve difficult problems if I try hard enough" and "I know how to handle unexpected problems." Higher scores indicated perceived higher general self-efficacy. Cronbach's alpha for the scale ranges from .76 to .90 (Schwarzer & Jerusalem, 1995). Reliability statistics for this administration was .89.

Loneliness

Isolation was measured using four items from the UCLA Loneliness Scale (Russell, et al., 1978). This scale is designed to measure one's subjective feelings of loneliness and social isolation. Respondents use a Likert scale to rank responses from often to never. The scores are added: Not lonely (0 - 2), moderate loneliness (3-8), severe loneliness (9+). Four items were selected from this scale based on their applicability to this particular study and to limit the length of the questionnaire. Cronbach's alpha was used to assess the reliability of the subscale and compare with the alphas for the entire measure. The four items asked respondents to rate their levels of: loneliness, feeling left out, isolation from others, and lacking companionship. The Cronbach's alpha of the full 20-item scale ranges from .89 to .94 (Russell, et al., 1978). Cronbach's alpha for this administration was .88.

Procedures

After IRB approval, potential respondents were electronically sent consent information and asked to click "next" if they agreed to participate. Recruitment occurred using email, campus electronic newsletters, and social media posts. No identifiable information was collected. Data were collected and stored in an encrypted software platform during the Spring, Summer, and Fall semesters of 2020.

Results

Student Perceptions of Switch to Online Education

In March 2020 after spring break, Gallaudet University switched from in-person classes to fully remote classes

taught online. The majority of students (n=83, 99.8%) learned of the pandemic between January and March 2020. Students' approvals of this switch were almost evenly split between approving the decision (n = 31; 36.9%), neither approving nor disapproving (27; 32.1%), and disapproving (26; 31.0%). A majority of the students (n = 40; 47.7%) reported that the transition to online classes was difficult, followed by 28.6% (24) who found the transition easy; less than a quarter of the students reported the transition as neither easy nor difficult. Similarly, the majority of students (n = 36; 42.9%) found that classes were difficult after transitioning to the online system. Only 23.8% (20) of the students reported that the online classes were easy. Despite difficulty with transitioning to online learning and taking the classes themselves, nearly 93% (n = 78) of students reported that they passed their classes. The majority of students (67; 79.8%) were satisfied with their academic performance prior to the pandemic and switch to online classes. Similarly, 73.8% of the students (n = 62) reported satisfaction with their academic performance during remote learning.

Well-being, Self-Efficacy, Loneliness, and Support

Students reported high levels of self-efficacy and well-being. Loneliness scores increased during the pandemic compared to prior periods. See table 1 for the means and standard deviations of the dependent variables.

Measure	Μ	SD	Indications	
Self-efficacy	3.58	.63	Students felt they were able to handle problems effectively.	
Loneliness (pre-COVID)	2.36	93	Students rarely felt lonely prior to the pandemic	
Loneliness (post-COVID)	3.48	1.02	.02 Students felt increased loneliness during the pandemic.	
Well-being	5.25	1.23	Students reported feeling happy during the pandemic and during online learning.	

Table 1. Means and Standard Deviations for Dependent Variables

However, correlation coefficients comparing pre- and during-COVID loneliness (Cole, et al., 2011) were nonsignificant indicating that students did not report increased levels of loneliness after switching to full-online education. Finally, the mean score for support was 3.13 (SD = .96) indicating that students felt they had social support at least sometimes or more often during the remote learning period.

Inferential Comparisons

An ANOVA was performed comparing the variable "difficulty with transition to online classes" with the dependent variables (i.e., well-being, self-efficacy, loneliness, and support). See table 2 for comparisons.

Measure	Df	F	Π^2	Р
Self-efficacy	4, 78	2.118	.792	.086
Loneliness	4, 79	4.285	3.885	.003*
Well-being	4, 79	2.092	3.030	.090

Table 2. Analysis of Variance

Bonferroni post-hoc tests indicated that those who found the transition to online classes very easy, had lower loneliness scores (p = .01). The variable age was dichotomized into two categories: 18 - 24 years vs. 25 years plus in order to make a more meaningful comparison between age and well-being scores. Results indicated there was a significant difference in well-being scores on age (t = 1.917, 82, p = .05). Those who were between the ages of 18 and 24 years had higher well being scores (M = 5.52, SD = 1.17) compared to those who were 25 years or older (M = 4.73, SD = 1.52). Other post-hoc comparisons with the dependent variables were nonsignificant.

Open-ended Feedback from Students

There were two open-ended questions at the end of the survey that asked students about the most rewarding and most challenging parts of taking online classes during the pandemic. Individual open-ended answers were categorized into themes as they emerged in the data. Student quotations that summarized the particular issues in a particular theme were extracted and used here.

Rewards

Student comments revealed that they found the online learning experience to have benefits. One of the most frequent comments was related to flexibility in their schedules. Students enjoyed not having to commute to campus, being home with their families working at their own pace, avoiding the risk of COVID infections, and working independently. Many commented that the professors were flexible with assignment due dates and were better able to schedule appointments around the students' needs. Another comment frequently written was related to the technology that Gallaudet University was able to provide. Students and faculty used Zoom for online instruction. Students wrote that they appreciated being able to continue their studies, interact with their classmates and professors. Professors were better able to meet with students individually with the available resources. Some students commented that because they were already familiar with Blackboard, the University's online learning management system, they were able to easily integrate the Zoom platform into their learning routines. Below are a selection of student comments:

I did not have to deal with the risk of being on campus. It was a clear decision and I was able to move home to help my family when we all lost our jobs.

I liked not having a long commute and being able to get more sleep, which, in turn, allowed me more

time to attend to my studies.

I liked not having to wake up early in the morning. The recorded Zoom lectures allowed me to review the material over and over until I understood it. I could take notes without missing information and used Internet sources to assist in my learning process while in class.

Challenges

Students reported a number of challenges with online learning. Connection, both interpersonal and technical, posed many challenges. Many remarked that the interpersonal relationships between students were often difficult because of the physical distance and inability to interact and socialize. Students found that using the technology presented unique challenges to full-participation in class. As one student wrote:

There was less interaction and discussion in and out of class. It was harder to follow classes, especially with accidentally switching back and forth between speakers and [technology] freezing. Assignments were less clear; concepts were less clear. I felt like I was teaching myself, especially in the two classes that didn't meet at all on Zoom. It was harder to feel focused, motivated, productive, and to stick to a schedule.

Some students remarked that they could see that the faculty were overwhelmed with the rapid transition to online learning. Lectures and assignments were not always well-prepared for the quick switch to remote learning. As one student commented:

We didn't have enough time to fully transition to online [learning] and change the lessons around the lessons to make them easier online.

Several students found that their home lives were filled with other distractions, such as other family members being around in the same household, family members contracting COVID, being served eviction notices, changing residences, and having unreliable and disruptive Internet connections. In addition to focusing on their studies, they often found other challenges in their lives that needed their attention, such as finances, relationships, and health issues.

Discussion

In the spring semester of 2020, Gallaudet University converted face-to-face courses and University activities to distance learning platforms as a result of the COVID-19 pandemic. Students had mixed reactions about this decision. Their reactions were almost equally split between feeling negative, neutral, or positive about the change. Despite the mixed approval of the conversion, a large segment of students reported that the transition was difficult (47.7%) suggesting that while students may understand the necessity of converting to online learning for safety reasons, this does not reduce the challenging nature of a mid-semester course format change. Older students (25+)

were found to have lower well-being scores than those students between the ages of 18-24, suggesting that age may play a role in how students adapt to not only the online environment but the abrupt and unanticipated change in course format. Specifically, as d/Deaf emerging adults have been shown to have positive experiences with online socialization, their well-being and social connectedness may have been less impacted than older students (Blom, et al. 2014).

According to participants, the University was successful in providing technology support, flexibility, and social support for students. Upon determination of University-wide transition to distance learning, Gallaudet administration implemented a COVID-19 task force, which included not only health-related updates and monitoring, but also an emphasis on faculty and student support in online learning. Technology service support was increased for faculty and students, including real-time troubleshooting via Zoom to allow for face-to-face, ASL-based communication (Gallaudet University, 2020). Technology support was one area where students reported feeling particularly supported including access to Zoom for direct communication in faculty meetings, instruction, and social events- all of which allowed students to have increased engagement in social interactions with others, thereby reducing loneliness.

While students stated that online course learning was harder due to challenges in personal class participation, internet instability and environmental distractions at home, a majority of students in the study were found to experience a strong sense of self-efficacy and overall well-being during the pandemic and online learning. Further, a majority of students (73.8%) expressed that they felt good about their academic performance during the pandemic and almost all (93%) of these students passed their classes. This stability in students' sense of self-efficacy and well-being is likely due in part to the increased support provided by the University administration, technology services, student support services, and faculty. In qualitative responses, students reported that professors, while sometimes less prepared due to the rapid transition to online learning, were generally flexible with assignment due dates and were responsive to student needs, including regularly scheduled individual meetings. This flexibility allowed for students to fit their home schedules to the needs of academic performance and have the ability to work at one's own pace.

Students who reported a harder time with the transition to online learning were found to have higher levels of loneliness prior to the transition. Qualitative reports from students indicated that interpersonal relationships were more challenging during this time due to social distancing and geographic location. Challenges in the area of social relationships are significant during this period of development. Specifically, young and emerging adult identities are shaped by social connection and positive social relationships during college have been shown to increase resilience, retention, and sense of well-being for college students (Defillipo, 2004; Stinson et al., 1987). Because University activities, such as graduation and sporting events, were converted to online or cancelled during this time, students had less opportunities for face to face social gatherings (Gallaudet University, 2020), however most students in the emerging adult age range (18-24) scored high in well-being and social connectedness during the pandemic. In fact, most students in the current study reported that they had social support at least some of the time or more often during 2020, suggesting that social needs were being met despite social distancing challenges. Asynchronous learning has been shown to be less accessible for d/Deaf college students, particularly as it relates

to social connection (O'Dell, 2019). This may be related to why older students experienced lower well-being scores as compared to younger students who may be more accustomed and comfortable with online-based social interaction.

Zoom, Kaltura, YouTube and other visually accessible platforms increase the ability of students and faculty to interact using ASL in distance classrooms. Zoom, using a synchronous online class structure, was the primary format used by Gallaudet University when face-to-face classes were converted to online; this may contribute to the positive experiences of students despite the challenges associated with the pandemic. Students enjoyed not having to commute to campus and felt that, by providing online learning alternative formats during the pandemic, their health and safety were valued by the University. Gallaudet University communication with students during the early months of the pandemic was frequent, and past research has shown that academic communication is important in students' feeling that their safety was valued by the university. As in the case of the swine flu in 2008 and 2009 when universities were closed as a result of the health crisis, academic communication techniques and health promotion procedures ultimately led to students' positive views and trust in the universities themselves (Kim & Niederdeppe, 2013). Academic institutions are charged with not only the academic development of college students, but with providing mental and emotional support during this important phase of life.

There were several strengths and limitations to the study methodology. The adjustments to University instruction and learning occurred because of the immediate risk to health and safety of the students, faculty, and staff because of the COVID virus. A strength for this study was that these circumstances for evaluation of emergency emergency measures were unprecedented. It allowed the researchers to evaluate the emotional and psychological impact of COVID and its effects on learning. Because students were familiar with using online learning, the use of an online survey fit well in the academic context. However, one concern was the low response rate of students (approximately 6%). The lack of responses may indicate that students were overwhelmed and fatigued with online activities. Another limitation was the implementation of written standardized instruments to deaf participants. Chronbach's alpha estimates have been used to estimate reliability of a given psychological instrument with deaf individuals (Craig, et al., 2019; Crowe, 2021; Penacoba, et al., 2020). Though the reliability statistics of the instruments yielded adequate reliability, there should be caution when generalizing results to a population for which an instrument is not normed.

Though the COVID-19 pandemic has had a large impact on University operations including course conversion to distance formats, students have been resilient and able to thrive in an online environment. Most students did not see a decline in academic performance and felt that the faculty were more flexible and supportive of students during this time. It appears that students at Gallaudet University did not experience an increased amount of loneliness, and overall felt happy and capable despite the mid-semester course format change to distance learning. Other universities in the United States may have varying student experiences of the impact of the pandemic on the college experience, but Gallaudet University has a unique population of students who make up the campus community. The Gallaudet community has shown that even in the face of a pandemic crisis d/Deaf college students are able to find a way to connect, learn, and thrive.

References

- Albertini, J.A., Kelly, R.R., & Matchett, M.K. (2012). Personal factors that influence Deaf college students' academic success. *The Journal of Deaf Studies and Deaf Education*, 17(1), 85–101. https://doi.org/10.1093/deafed/enr016.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469
- Blom, H., Marschark, M., Vervloed, M.P.J., & Knoors, H. (2014) Finding friends online: Online activities by Deaf students and their well-being. *PLoS ONE*, 9(2), e88351. https://doi.org/10.1371/journal.pone.0088351
- Charlson, E., Bird, R., & Strong, M. (1999). Resilience and success among deaf high school students: Three case studies. *American Annals of the Deaf, 144*(3), 226-235. Retrieved from http://www.jstor.org/stable/44390341
- Cole, R., Haimson, J., Prez-Johnson, I., & May, H. (2011). Variability in pretest-posttest correlation coefficients by student achievement level. *National Center for Education Evaluation and Regional Assistance*. https://ies.ed.gov/ncee/pubs/20114033/pdf/20114033.pdf
- Criag, K., Crisologo, A., Anderson, M., Sutton, N., & Leigh, I. (2019). Reliability and validity of the Adapter COPE scale with deaf college students. JADARA, 44(3). Retrieved from https::/respository.wcsu.edu/jadara/vol44/iss3/5
- Crawford, J, Butler-Henderson, K, Rudolph, J, Malkawi, B, Glowatz, M, Burton, R, Magni, P, & Lam, S. (2020). COVID-19: 20 countries higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3 (1), 1-20. https://doi.org/10.37074/jalt.2020.3.1.7.
- Crowe, T. (2018). Factors associated with well-being in a sample of deaf adults. *Journal of Developmental and Physical Disabilities*, *31*(4/5). https://doi.org/10.1007/s10882-018-9639-4
- Crowe, T. (2020). Factors associated with help-seeking and self-efficacy among a sample of deaf adults. *Journal of Developmental and Physical Disabilities*, 33(1), 51-63. https://doi.org/10.1007/s10882-020-09739-9
- De Filippo C. L. (2004). Reflection on the quality of life as a college concern to facilitate success of students who are deaf. *TCT Education of Disabilities*, 3(1), 11–22. Retrieved from https://tsukubatech.repo.nii.ac.jp/?action=pages_view_main&active_action=repository_view_main_item_detail&item _id=1229&item_no=1&page_id=13&block_id=21
- Foster, S. (1988). Life in the mainstream: Deaf college freshmen and their experiences in the mainstreamed high school. *Journal of the American Deafness and Rehabilitation Association*, 22(2), 27–35.
- Galanaki, E. & Sideridis, G. (2019). Dimensions of emerging adulthood, criteria for adulthood, and identity development in greek studying youth: A person-centered approach. *Emerging Adulthood*, 7(6), 411-431. https://doi.org/10.1177/2167696818777040
- Gallaudet University. (2020). Coronavirus (COVID-19). Retrieved from https://coronavirus.gallaudet.edu/
- Gallaudet University. (2007). *Bilingual mission framework*. Retrieved from https://www.gallaudet.edu/office-of-the-president/gallaudet-strategic-plan/bilingual-mission-framework
- Gallaudet University. (2020). Fast facts. Retrieved from https://www.gallaudet.edu/about/news-and-media/fast-facts

- Gfellner, B. M. & Bartoszuk, K. (2015). Emerging adulthood in North America: Identity status and perceptions of adulthood among college students in Canada and the United States. *Emerging Adulthood*, 3(5), 368– 372. https://doi.org/10.1177/2167696815595555
- Gutierrez, I. A., & Park, C. L. (2015). Emerging adulthood, evolving worldviews: How life events impact college students' developing belief systems. *Emerging Adulthood*, 3(2), 85–97. https://doi.org/10.1177/2167696814544501
- Katsiaficas D. "I know I'm an adult when...I can care for myself and others": The role of social responsibilities in emerging adulthood for community college students. *Emerging Adulthood*, 5(6), 392-405. https://doi.org/10.1177/2167696817698301
- Kim, H.K. & Jeff Niederdeppe, J. (2013). The role of emotional response during an H1N1 influenza pandemic on a college campus. *Journal of Public Relations Research*, 25(1), 30-50. https://doi.org/10.1080/1062726X.2013.739100
- Knoors, H. (2016). Language use in the classroom: Accommodating the needs of diverse deaf and hard-of-hearing learners. In M. Marschark, V. Lampropoulou, & E. K. Skordilis (Eds.), Perspectives on deafness. Diversity in deaf education (p. 219–246). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780190493073.003.0008
- Konstam, V. (2015). Emerging and young adults: An introduction. In *Emerging and Young Adulthood. Advancing Responsible Adolescent Development (pp. 1-16)*. Cham: Springer. https://doi.org/10.1007/978-3-319-11301-2_7.
- Lukomski J. (2011). Resiliency and the emerging Deaf adult. In: Zand D., Pierce K. (eds) Resilience in Deaf Children. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-7796-0_15.
- Medvedev, O. N., & Landhuis, C. E. (2018). Exploring constructs of well-being, happiness and quality of life. *PeerJ*, 6, e4903. https://doi.org/10.7717/peerj.4903.
- Meyer, J., & Kashubeck-West, S. (2011). Psychological well-being in emerging adults who are deaf. In D. H.
 Zand & K. J. Pierce (Eds.), Resilience in deaf children: Adaptation through emerging adulthood (p. 359–374). Springer Science + Business Media. https://doi.org/10.1007/978-1-4419-7796-0_14
- O'Dell, N. (2019). Self-Representation and Social Identity in Discussion Threads: The Experiences of Deaf College Students in an Online Learning Community (Publication No. 13861456). Doctoral Dissertation, University of Rochester. Proquest Dissertation Publishing.
- Penacoba, C., Garvi, D., Gomez, L., & Alvarez, A. (2020). Psychological well-being, emotional intelligence, and emotional symptoms in deaf adults. *American Annals of the Deaf, 165*(4), 436-452. https://doi.org/10.1353/aad.2020.0029
- Perry, M. (2018). A comparison of social disconnectedness and perceived isolation in Deaf/Hard of hearing women and hearing women (Publication number 4750). Walden Dissertations and Doctoral Studies. https://scholarworks.waldenu.edu/dissertations/4750
- Russell, D., Peplau, L., & Ferguson, M. (1978). Developing a measure of loneliness. *Journal of Personality* Assessment, 42, 290-294. https://doi.org/10.1207/s15327752jpa4203_11
- Schnyders, C.M. and Lane, J.A. (2018), Gender, parent and peer relationships, and Identification with emerging adulthood among college students. *Journal of College Counseling*, 21, 239-251. https://doi.org/10.1002/jocc.12106

- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. 35-37). NFER-Nelson.
- Shea, P. & Bidjerano, T. (2016). A National study of differences between distance and non-distance community college students in time to first associate degree attainment, transfer, and dropout. *Online Learning*, 20, 14-15. https://doi.org/10.24059/olj.v20i3.984.
- Sheppard, K. & Badger, T. (2010). The lived experience of depression among culturally Deaf adults. *Journal of Psychiatric and Mental Health Nursing*, *17*, 783-789. https://doi.org/10.1111/j.1365-2850.2010.01606.x
- Stinson, M., Liu, Y., Saur, R., & Long, G. (1996). Deaf college students' perceptions of communication in mainstream classes. *The Journal of Deaf Studies and Deaf Education*, 1(1), 40–51, https://doi.org/10.1093/oxfordjournals.deafed.a014280
- Stinson, M.S., Scherer, M.J. & Walter, G.G. (1987). Factors affecting persistence of Deaf college students. *Research in Higher Education*, 27, 244–258. https://doi.org/10.1007/BF00992001
- Swenson, L., Nordstrom, A., & Hiester, M. (2008). The role of peer relationships in adjustment to college. *Journal of College Student Development*, 49, 551-567. https://doi.org/10.1353/csd.0.0038.
- To, S. & Sung, W. (2017). Presence of meaning, sources of meaning, and subjective well-being in emerging adulthood: A sample of Hong Kong community college students. *Emerging Adulthood*, 5(1), 69-74. https://doi.org/10.1177/2167696816649804
- VanderWeele, T., Trudel-Fitzgerald, C., Allin, P., Farrelly, C., Fletcher, G., Frederick, D., Hall, J., Helliwell, J., Kim, E., Lauinger, W., Lee, M., Lyumbomirsky, S., Margolis, S., McNeely, E., Messer, N., Tay, L., Viswanath, V., Weziak-Biatowolska, D., & Kubzansky, L. (2020). Current recommendations on the selection of measures for well-being. *Preventive Medicine*, *133*, 1-6. https://doi.org/10.1016/j.ypmed.2020.106004
- Wheaton, M., Abramowitz, J., Berman, N., Fabricant, L., Bunmi, B., & Olatunji, O. (2011). Psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic. *Cognitive Therapy and Research*, 36, 210-218. https://doi.org/10.1007/s10608-011-9353-3.
- Zavaleta, D., Samuel, K. & Mills, C.T. (2017). Measures of Social Isolation. *Social Indicators Research, 131,* 367–391. https://doi.org/10.1007/s11205-016-1252-2

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