

NEW YORK COLLEGE LEARNING SKILLS ASSOCIATION

Journal of Research and Teaching in Developmental Education

Fall 2020 Edition

Jesse M. Redlo, Ed.D & Emily Ryan-Radder, MA

11/1/2020



Table of Contents

Note from the Editor: Developmental Education Needs during COVID-19.....	3
A Note from the Editor: “Take Care of Yourselves, and Each Other”	4
Teaching Remotely in a Topsy-Turvy World: Rethinking the Accessible Classroom in the Era of COVID-19.....	5
Combating Bias through Asset-Based Teaching.....	12
Performance and Attitude in Relation to Gender in a Computer Aided Developmental Math Class.....	17
Educating Underprepared Professionals during COVID-19: A Case Study.....	23

Note from the Editor: Developmental Education Needs during COVID-19

Fellow Educators,

COVID-19 has made this a challenging time to be a developmental educator. This pandemic has forced multiple institutions to move all courses to either an asynchronous or synchronous online model, which presents unique obstacles for developmental education. When I wrote to all of you last year, I discussed the need for developmental educators to innovate their practices; in light of the pandemic, this need is critical to learner success. As you will see throughout this edition of the journal, teaching innovations, particularly those targeted towards developmental-level education can be seen throughout the state of New York and the country as a whole, making scholarly journals, such as this one, an integral outlet for disseminating best practices and expanding the knowledge base for developmental education.

In one of the articles you will read in this edition, the authors draw attention to accessibility concerns in the online classroom; an incredibly important and timely topic. Accessibility is a paramount concern in any type of education, but particularly developmental education where learners with learning disabilities are quite common. Moreover, the text-heavy nature of most online learning environments can create an unequal educational landscape for those with certain learning disabilities. As most of us would agree, the pacing of material is crucial to the success of any developmental education course, as learners can become overwhelmed quite easily. In online courses, with lots of links, buttons, and content varieties, learners could become confused and give up. Elements of this issue are addressed in another article you will read in this edition focused on performance and attitude relationships. From my perspective, mind over matter has never been more accurate than it is right now.

With COVID-19 causing many institutions to rely on online learning, we must keep in mind the continued prevalence of the digital divide. A large number of our developmental learners come from impoverished settings, wherein they may not have access to a computer, a reliable internet connection, or a web camera. One of my concerns is the effects of COVID-19 in this regard may further perpetuate the cycle of developmental learner's struggling to reach credit-bearing courses and ultimately graduation. Some schools have been loaning out extra equipment, such as Wi-Fi hotspots and laptops, but not all schools have these resources. Keeping equity at the forefront of our minds in a purposeful way will be essential to better serving developmental learners.

At this difficult time in the life of developmental education, I am excited to see the body of research expand to help inform our specialized practice. For this reason, I encourage all of you to conduct research and submit your findings to this journal for publication. Happy researching!

Sincerely,



Jesse M. Redlo, Ed.D.

Co-Editor, Journal of Research and Teaching in Developmental Education

A Note from the Editor: “Take Care of Yourselves, and Each Other”

Fellow Educators,

Some of you may recognize the title of my note this edition as the famous sign off words of Jerry Springer after each harrowing episode of *The Jerry Springer Show*. Somehow, after producing a veritable sociological circus, Springer would re-center his audience with a cautionary tale to be learned from the episode’s events and the reminder that, in the end, we are all each other has. Even if we bring differing opinions of the value of this cultural mainstay, one thing is for certain; this call to action has never rang truer than it does in this year of 2020.

It isn’t surprising then that, as educators across the nation we have sprung into action to take care of each other. The extra hours creating meaningful virtual content, the late-night emails of reassurance, and the stretching of our practice and pedagogy into what is, for many of us, unexplored territories are all love languages through which we care for our students. In this edition of *RTDE*, you will hear the accounts of several fellow educators adapting their passion and pivoting their roles in incredible ways for the needs of students across all levels and curricula.

You’ll also hear the accounts of educators continuing to understand and improve upon issues of bias and gender implications in the classroom that reach further back, even to the days of NYCLA’s inception. As we venture into a world beyond the traditional understanding of education that many of us have operated within, we would be remiss to put aside these critical implications in whatever form the future of the institution is reshaped to be. In this edition, I encourage you to celebrate the studies of our peers and be encouraged by the achievements of our colleagues and their students.

I feel it is important to recognize that, as you open this special edition of the journal, you too, dear reader, likely are in a very different place than you were when you reviewed our last published special edition. For many of us, these uncharted waters may translate into position changes, layoffs, retirements, or leaving the classroom for other reasons. It is important to us at NYCLSA that you know you are always a part of our educational community regardless of what title you now hold or no longer hold. Your passion for our learners remains unmoved and cements our common bond as educators.

As you engage with our special edition, I encourage you to reflect on the ways in which we have taken care of each other. At the same time, I also encourage you to evaluate the ways in which you are taking care of yourself. As educators, we have the tendency to give of ourselves at our own expense. It is important to recognize that, in order to continue our mission, we must take care of ourselves as well. As editors, it is our ardent hope that simply engaging with our educational community through reading this special edition of *RTDE* will provide an opportunity to uplift and refresh. In this way, perhaps we are all also continuing to take care of each other.

Sincerely,



Emily Ryan-Radder, MA

Co-Editor, Journal of Research and Teaching in Developmental Education

Teaching Remotely in a Topsy-Turvy World: Rethinking the Accessible Classroom in the Era of COVID-19

Cindy Mercer and Susan Behrens
Marymount Manhattan College
cmercerc@mmm.edu

Teaching Remotely in a Topsy-Turvy World: Rethinking the Accessible Classroom in the Era of COVID-19

In the face of the coronavirus pandemic in Spring 2020, our college, like thousands of other institutions, moved its courses online. As teachers, we found ourselves with different degrees of comfort with the technology available for us to continue to do our jobs. One of us (CM) was skilled in the art of all things technological. Another (SB) found herself going from a very good teacher to feeling like a mediocre one and asking for a lot of help, usually from CM, sometimes daily over the phone and via Zoom. Further, the “digital natives” (aka our students) did not all slip easily into the role of a virtual learner. There were technological challenges we all faced. And that wasn’t all: the pandemic also brought financial and psychological stressors in its wake. Faculty and students both required support beyond the merely technological.

Having been able to reflect on this change over six months, we as educators both discovered that virtual teaching – ironically -- allowed us a better view of how the students themselves were learning in (and coping with) this new format. The experience brought us closer to our students. The line between remote teacher and remote learner is, as it turns out, not that strict. As we ourselves trained other faculty or sat through hours of webinars in how to do “all this, suddenly,” we also learned from what our students were experiencing. We realized that what we took for granted in the pre-COVID teaching world had to be re-examined for the sake of our students’ education. Many unwritten and unspoken rules about teaching and learning had to be uncovered, reviewed, and revised. As we head into another semester of virtual teaching, and hope for more face-to-face interactions in the future, we are learning to see teaching overall in a new way, one that is more universally accessible and of benefit to all students.

We share some of the lessons we realized we still needed to learn about our students (and ourselves) from the topsy-turvy nature of Spring 2020. We consider below six areas of reflection, including the ways we work with our Learning Management System (LMS), design assignments, grade, and engage and communicate with students through the LMS and Zoom. These reconsiderations reflect ways that we learned, and are still learning, to maximize our students’ education. In the spirit of our daily phone and Zoom calls to each other, we report each of our experiences below in the first-person plural. We are all still learning.

Lessons about our LMS Organization

Since we had been using our college’s LMS (Blackboard) extensively in face-to-face classes before the pandemic, we thought we were ready for the move to fully online instruction. The old concept of an LMS as a repository of files (mainly good for saving on photocopying)

was indeed outdated, and we had moved beyond that model. But we still had to rethink the overall organization of our course. After all, a logically organized LMS saves students and instructors time and spares frustration.

It became clear right away that one area of revision was the Content tab. We usually create a folder per unit; that folder contains all the unit's material, including the assignments and discussion forums. Each folder's description contains the class schedule taken from the syllabus. This arrangement had worked well for in-person courses since we started each class by bringing up the schedule and reviewing the workload and topics. However, as we moved online, flaws appeared in this beautifully laid-out structure. First, to meet accreditation standards for class time and to promote engagement with class materials, we added weekly low-stakes assignments, thus cluttering up folders and overloading calendars. Some students began to email us frequently, asking where to find things; others missed due dates or failed to turn in assignments.

Another transition-to-remote glitch arose. For longer assignments spanning more than one unit, we had been putting the materials in the folder where the assignment was originally introduced. This meant the material appeared two or three weeks before the assignment was due, allowing students to start early and plan ahead. But then as the class moved to the next unit's folder, the assignment instructions and upload link "disappeared" from the students' view. Without the visual reminder, we needed to constantly prompt students to complete work and email directions for finding the materials. The increased workload caused by multiple queries where to find assignments seemed needlessly frustrating until, in a Zoom session, we found ourselves opening folders in a mad search for a document which we had placed so strategically. Obviously, the students weren't the only ones unable to locate files when needed.

In reaction to these organizational problems, we decided to rethink and regroup for our upcoming summer course. All major assignments would be placed together in a common folder labeled "Assignments." This central locale made it easier for students to locate material and keep up with course work. We also ensured that everywhere an assignment was mentioned, the due date was prominently displayed: in the syllabus, on the schedule, on the assignment instruction sheet, on the link to upload, everywhere.

The lesson we learned for going forward: Our students' questions and frustrations were telling us more than we realized. What seems a logical organization to the instructor, who had painstakingly arranged the course, does not always take into account other viewpoints and approaches.

Lessons about Assignment Due Dates

Confronted with proliferating low-stakes assignments to meet contact hour requirements and online submissions necessitated by virtual teaching, we started to rethink our due dates. Traditionally, assignment due dates are tied to class meetings: Students bring in their papers, neatly typed, to place on the teacher's desk. We at least had moved beyond that scenario. Even before Spring 2020, we replaced paper assignments with electronically uploaded files in the LMS.

So, why were we still structuring assignments around class meeting days? It no longer made sense; moreover, it benefitted no one. Everyone quickly became overwhelmed: teachers, who were receiving multiple low-stakes assignments to grade on the same day; and procrastinating students, who were attempting to complete several assignments the day they were due (sometimes actually skipping our class to do so). Additionally, learning was not served, as students were not getting the frequent, shorter interaction with the course material which is better suited to understanding and retaining key concepts (Oakley, 2014). For example, when learning the International Phonetic Alphabet in our *Phonetics* course, once a week practice was not as useful as multiple, shorter encounters during the week. Spreading out the due dates improved everyone's experience. We also took a hint from Blackboard: noticing that the default submission time in Assignments was 11:59 pm ("end of day"), we decided that "end of day" was a better deadline than 5:21 pm when class ended. After all, were we really going to grade all those papers right after class?

The lesson we learned for going forward: We needed to think beyond the contact hours, and be honest and realistic about what makes sense for both us and our students' workload and workflow.

Lessons about Tests and Assignment Formats

How long had we actually been testing memorization? Once settled into the virtual setting, we realized the answer was a lot! Now, there was suddenly less opportunity to test students' abilities to memorize material. How were we going to ensure all notes would be away during testing time (without enlisting a proctoring third party)? The standard mantra of our *Phonetics* class, for example, had always been to memorize the phonetic symbols for the exam ("chart by heart"). This "problem" of not testing student recall, in fact, woke us up -- and freed us up -- to create more inventive exam questions, which actually tapped deeper learning and were more applicable to the real world. After all, in real life we tend to have our charts available. Memorizing is useful for speed, true, but our revised assignments demanded higher-order thinking from the students. And opportunities for more written work. For example, *Phonetics* students wrote about the use of non-standard accents in literature, as well as the tendency of dictionaries to list only one pronunciation of words. We went beyond "chart by heart."

Rethinking assignments could also address the loss of social opportunities associated with virtual learning: students co-mingling with their peers in classrooms before and after sessions, or in the elevators, or the cafeteria. They seemed deprived of the class's social experience. This was when we realized that assignments we had designed as solo projects could be reconfigured to allow for team work. This reconsideration allowed us to revisit the learning objectives of the projects, and we were able to deepen the learning by asking students to work in teams to find both common ground among teammates and their own contributions to the assignment. They had to master the same material but now in a "negotiation" format (also more applicable to the real world).

The Zoom equivalent of "pair-share" and other small-group work was the breakout room feature. Here we saw an advantage over the seated course. Now, students could truly be grouped

randomly during small group exercises; instead of turning to their (usual) seatmate (again) for a paired exercise, they might be sent off to Group 3 with two unfamiliar partners. And they had privacy (unless we “popped in”; see below). Students also had a certain autonomy and control, being in charge of their Zoom screens. We even incorporated into our summer course an end-of-week Zoom-socializing exercise, in which random groupings of students were asked to talk about anything but the class for 15 minutes.

The lesson we learned for going forward: Spring 2020 demanded that we take a more holistic approach to our students, think beyond academic goals, and make room for the devastating effects of the pandemic. Students required more autonomy and more options to succeed. When given the opportunities, they rose to the challenge.

Lessons about Grading and Feedback

Students usually are grade-conscious, but in our virtual world we found that their concern and anxiety had doubled. Teachers might be able to easily convert from percentage, to points, to letter grades in their heads; many students cannot. In a seated class, students have been known to cluster around our desk at the end of class to ask, “How am I doing?” Relying on the LMS grade book seemed too much for them. We were surprised when students asked about their grades, all clearly visible in the LMS, or seemed to think low-stakes assignments, worth 15% of their grade, were okay to skip if they got too busy. True, our students were thinking strategically (i.e., which assignments were worth the most points), but without the ability to calculate their grades based on work done, they were not making good choices.

To clarify the grades for students, we created a grade calculator for our classes in Excel. The calculator allowed students to input grades received, as well as predict future grades and automatically view their final grade. This brought in a mountain of past-due work, which we accepted graciously. And it supplied students with a tool to allow more autonomy and reassurance that they were on the right track and progressing. We realized that the students needed more sense of control during this difficult time.

We have known since the beginning of the outcome assessment movement that rubrics are important. Our LMS makes it easy to create rubrics for grading and feedback purposes, and we often created simple rubrics for assignments, which made grading much faster for us. However, with the switch to remote, these documents lacked the personal touch. We found that it was useful (and easy) to create short videos with feedback to upload with the students’ graded paper. These videos, no more than one or two minutes, encouraged students to increase their engagement and improve further work.

Quick response time from teachers also reassures students and maintains a strong instructor presence in the class. However, it is not always possible, and it seemed more so in the spring of 2020 when we were getting used to the technology and constantly switching gears. We realized we first needed to be honest with ourselves: How likely were we to return an email sent at 10pm? Or to grade a set of papers in two days with a Tuesday/Thursday class and a Tuesday deadline?

(If not likely, make the deadline Thursday, or even Friday if we were truly going to wait until the weekend to grade.)

Then we needed to be honest with the students to set realistic expectations, on both sides. Clearly giving a student a realistic time frame for receiving answers from us helped increase student satisfaction. Rather than stating how quickly we would answer questions, we decided to let students know what days/times we would devote to questions. This helped students plan ahead and submit their questions to ensure a quick turnaround. When students' questions were complex, we arranged a virtual conference to speak directly with them on Zoom. We gave students our cell phone numbers to allay fears, yet only one student actually called (allaying our fears).

The lesson we learned for going forward: Students cannot read our minds. What we think is transparent and explicit and realistic might not be to them. We need to share our thinking about learning objectives, grading, and communication expectations.

Lessons about Distractions in the Classroom

Zoom provides a rich virtual classroom environment with a chat function, a hand-raising icon, and a screen share function. It was very difficult for us to monitor all these functions simultaneously. Students often good-naturedly reminded us to look when a question popped up in the chat or when we had not activated the share-screen-with-participants option on Zoom. Or had (again) failed to start recording.

We soon realized how much multi-tasking we often ask students to undertake, and take in, even in ordinary circumstances. In the seated course, we are dashing to the whiteboard, or pointing out something on a handout, or flipping through PowerPoint slides and embedded YouTube videos. We ask students to take notes, view, read, and ask questions, all at once. The circus-like nature of a multimodal lesson can grind students down. And now in Zoom, we were feeling it, too.

There were other problems with Zoom we hadn't anticipated. In the classroom, it seemed easy to monitor small group sessions and roam around the room to keep students on-task. The instructor can quickly assess the room to see which groups are finishing up. With the breakout rooms on Zoom, students needed explicit instructions on when and how to return to the classroom. Popping into a breakout room ourselves made sense to us, and we even joked about "spying" on our students. But students reported unannounced pop-ins to be distracting and counterproductive. Perhaps our roaming and spying around the classroom in the old days were also distracting, not as helpful as we thought.

We also realized more that was distracting about Zoom: Students usually do not see all the other faces in the class (at least not with the traditional parallel rows of seats), and they never see their own faces. With Zoom, they do. Further, the teacher is no longer hierarchically "in the front"; whoever is the viewer is first in the scroll and trades off being highlighted on the screen with whoever is talking. We were often distracted by seeing ourselves (is our smile lopsided?). And students must be too. We even noticed students taking the advantage of the mirror-like function

of their own rectangle (the Zoom Groom, we called it). There was enough visual busy-ness to distract anyone.

The lesson we learned for going forward: “Less is more” is a well-known cliché, but for a reason. We are rethinking how much we “do” and “show” and “direct attention to” all at the same time. Zoom showed us how we should slow down and be in the “now” more often.

Lessons about Cameras and Presence

Another distraction of Zoom was the invasion of personal space. Asking students to turn on their cameras meant asking them to let us into their homes, and in most cases, their bedrooms, as that is where the majority of them study and, therefore, where they join their Zoom sessions. A student wearing a Harry Styles t-shirt is making a conscious, public point; sitting in front of a Harry Styles wish-board above her bed might be a more private matter. It felt intrusive, so allowing the student to choose camera “on” or “off” was a sign of respecting their privacy.

Camera setting is a much-debated issue at our college: should we make “cameras-on” the default setting for all students? The use of the camera increases class cohesion. As we moved into our summer courses, students had not met face-to-face and instructors could not form a mental image of the them. Given the option of “cameras-off,” but being indecisive, students seemed to bend to peer pressure; if one student was only “there” as a black rectangle or profile photo, others followed suit. It seems that establishing a “camera-optional” classroom meant no one would turn on a camera. How can one find equality and still build community and good lines of communication?

We often rely in the classroom on facial expressions and body language to gauge whether or not a student is grasping the material, whether it is time to move on, and if more examples are necessary. We are still learning. We employed Zoom’s “reactions” feature as a handy way to supplement the feedback. Students could indicate their understanding by giving thumbs up when they were ready to move on. Other options included emojis, yes/no responses, and Zoom polls.

What does participation mean in the Zoom world, especially in a class that is 100% asynchronous? What does it mean in the seated classroom, come to think about it? We have always been uncomfortable with assigning a percentage of the final grade to this ill-defined concept, and participation can vary widely in quality. Linguistic research also notes that men tend to dominate in group discussions (Jule, 2019). Thus, Zoom and our LMS allowed us to rethink how we want our students to contribute and why. And to pair the “how” to the “why.” Discussion boards are asynchronous and public; chats in Zoom could be private or public; polling could be anonymous or a matter of how many thumbs up we count and thus more of a temperature-check. And then there was still the more personal email. And office hours. Did using office hours “count” toward participation? Could the concept be reframed as more inviting and supportive (Behrens, 2013)? We decided that all input “counted” and tried to maximize the opportunities to communicate with the students.

The lesson we learned for going forward: Even with Zoom, let's take advantage of everyone being all together. Have the conversations with the students to find out what they think. What is the best way to communicate that is true to everyone's objectives? "You are here," says many a map in the English-speaking world. We are here with our students. What do we want to do with that opportunity?

Conclusion

Being virtual the past six months brought us closer to our students. We were able to revisit assumptions and uncover patterns, and we pushed to break habits instilled in our many years of teaching. Hopefully, we can make better choices going forward to ensure that learning is more accessible to all students, regardless of the format.

References

- Behrens, S. J. (2013). Office hours. *Research and Teaching in Developmental Education*, 29(2), 30-32.
- Jule, A. (2019) *Speaking up*. Briston, UK: Multilingual Matters.
- Oakley, B. A. (2014). *A mind for numbers: how to excel at math and science (even if you flunked algebra)*. New York: Jeremy P. Tarcher/Penguin.

Appendix

Here are some of our favorite resources for virtual teaching.

- ACUE Online Teaching ToolKit <https://acue.org/online-teaching-toolkit/>
- Darby, F. (2019). *Small Teaching Online*. San Francisco: Jossey-Bass.
- Designing Synchronous Online Interactions and Discussions
<https://files.eric.ed.gov/fulltext/ED573166.pdf>
- Merlot: <https://www.merlot.org/merlot/>
- Quality Matters: <https://www.qualitymatters.org/higher-ed-bridge-guide-basic>

Combating Bias through Asset-Based Teaching

Dr. Ann Hayslip

Abstract

Within an early childhood methods course, teacher candidates were prepared to spend three weeks in immersive clinical field experience. Early childhood placements were in rural, high poverty areas of central New York State. In addition to readings and authentic project-based undertakings, preparation included interactive activities on culturally responsive curriculum and assets relative to the edTPA. Candidates anticipated planning, instructing, and assessing sequential, scaffolded, developmentally appropriate, and culturally responsive lessons as part of a mock edTPA to commence during the first week of field experience. Before their internship, the teacher candidates collectively espoused knowledge of culturally responsive practices and asset-based ideologies; however, at the end of the three-week field experience, their responses to edTPA prompts and discussions reflected beliefs laden with bias, stereotypes, and prejudice. This paper is a synopsis of the basis of these biases and the steps taken to remedy these deficit beliefs.

Key terms: *assets, culturally responsive, asset-based, deficit-based,*

Introduction

The framework of the performance-based edTPA teacher certification examination requires candidates to incorporate the personal, cultural, and community assets of their students within meaningful sequential lessons. An asset, by definition, is “a useful or valuable thing, person, or quality” (Oxford Dictionary, 2020). It includes not only items one possesses, but the traits and characteristics a person embodies including their strengths, talents, and knowledge.

Assets

To incorporate assets within culturally responsive teaching, one needs to acknowledge human capital and to identify the human, social, and physical capital within communities. Human capital recognizes that individuals and communities possess assets that are of value and contributable to society (NYU Steinhardt, 2018). A “school must be a place where all students feel supported with daily contributions to their future-focused goals and personal social capital” (Lindsey, 2019, p. 15). A teaching body that is neither diverse nor representative of the society with which they interact may have its challenges in being able to appreciate the assets of those whom they know little about. This disconnect may lead to biases and misconceptions. Therefore, by introducing an asset-based teaching model, teacher candidates may appreciate the diversity of their students and integrate inclusionary and strength-based teaching methods.

Asset-Based Teaching

Asset-based teaching is derived from a strength-based model rather than a need-driven approach. It is about embracing and celebrating differences rather than seeing differences as problems to be fixed. Within an asset-based teaching model, stakeholders, including students and teachers, remain open to discoveries, believing that differences may bring new possibilities. This thinking is diametrically opposite of a deficit model, often plagued with despair and malaise (The University of Memphis, 2019).

Traditional models of teaching have historically focused on a need-driven ideology, an ideology based on fixing the student. Dating back to the child-saving movement, despite the benevolent bent afforded to Jane Addams, the movement was about a better-educated society usurping control over less desirable juvenile delinquents (Platt, 1977). It was about the middle-class presuming to be able to solve the problem of poverty (Long, 1999).

Deficit-based teaching models have been personified by teachers who place unrealistic expectations on or blame the student rather than offering challenging work while providing praise and support along the way. Asset-based teaching is about looking through a different lens. When a teacher sees a child squirm or rock in their seat, do they see a child who “can’t sit still,” or an energetic eager child? When a child asks incessant questions, is it a natural response to chide the student for disruptive behavior, or is it a clue for a possible inquiry-based investigation?

A Disconnect between Teachers’ and Students’ Home-Connections

The need to save a student, or to place unrealistic expectations may be born out of detachment and preconceived notions about those whose lives may seem different from our own. Elementary school teachers in the United States have long been represented by a homogenous middle-class constituent. Today, more than 75 percent of students enrolled in teacher preparation programs are white, and eighty-two percent of elementary teachers identify as white (U.S. Department of Education, 2016). While the teaching force is not diverse, the racial diversity of students in the public schools continues to grow. It is projected that in 2024, 54 percent of K-12 students will identify as non-white (U.S. Department of Education, 2016). The economic divide between teachers and students is evidenced as well, with teachers solidly representing the middle-class and one in ten students living at the poverty level (Trustees of Columbia University, 2019).

The disconnect between teachers’ and students’ backgrounds may inadvertently lead to a self-fulfilling prophecy and misconceptions and bias. Research by Rosenthal and Jacobson highlight not only how teacher bias affects expectations, but the differences in how teachers interact with students whom they perceive to be more or less intelligent (Rosenthal, 1966). The teacher candidates in this group, routinely equated family income with academic capability and school success. They presumed that seemingly non-participatory parents and caregivers did not care about school and they failed to see any assets within a low-income household. This was the common bias and misconception among the cohort.

Foot and Hopkins assert, that despite “having needs and problems, our most marginalised communities also have social, cultural and material assets”(Asset Based Approaches, 2018, p. 1). Societally, marginalized communities, like Jane Addams’ juvenile offenders, have been maligned with a population in need of being saved, a populace defined by deficiencies, economically, educationally, or socially. These perceived deficiencies are seen as limited opportunities for actualization (NYU Steinhardt, 2018). My job was to provide the teacher candidates with a new lens, a lens that would enable them to not only see but to celebrate the assets of the field experience students and their caregivers.

The Lens of Assets Rather than Deficits

Byron White asserts that deficit models embed terminology that is defined by problems. He cites descriptors, including “at-risk,” “disadvantaged,” and “broken-home,” as examples of language used to describe individuals by problems of poverty, crime, violence, and distress (White, 2016). He extends the terminology to include “minority,” “low-income,” and “first-generation,” each term inferring the incapacity to make strides because of limited opportunities to actualize.

Biases, Stereotypes, and Prejudices

Well-intentioned teacher candidates may appear to be empathetic and compassionate and still unwittingly contribute to a deficit approach. Gorski refers to the disproportionate teaching to the test, rote, skills and drill, and direct instruction that occur in low-income schools (Gorski, 2013). Project-based and inquiry models of teaching are more often instituted in middle or higher-income schools.

Also, within low-income schools, is a disproportionate emphasis on soft skills, non-cognitive skills that include authority, routine, and taking orders (Spring, 2007). The teaching of soft skills has been associated with low-income students and in particular, with programs such as the Knowledge is Power Program (KIPP) (Goodspeed, 2016). Soft skills, “like responsibility, perseverance (or grit), the ability to get along with others, self-control, and motivation are highly correlated with future educational levels” (Goodspeed, 2016). The issue is not whether soft skills should be taught, rather, to what degree are cognitive skills being neglected.

Added to the bias of equating poverty with deficiency, the cohort espoused the misconception of the poor as a culture. The poor are not a culture; instead, they are a diverse group of individuals (Gorski, 2013). Unwittingly, the teacher candidates may have developed implicit biases stemming from their early childhood experiences.

Cultural bias often begins during the toddler age, manifests itself in childhood, and with reinforcement, can lead to stereotyping and to prejudicial and discriminatory behaviors and attitudes (Schubert Center for Child Studies, 2014). Stereotypes and prejudices are often resistant to change, perpetuated by the conformity of dominant group culture and sometimes fueled by mass media characterization.

In addition to misconceptions, biases, and presumptions about the poor as a culture, are fallacies that portray the poor as not valuing education, being lazy, as substance abusers, and linguistically deficient (Gorski, 2013). In reality, those living at the poverty level work more hours in comparison to the non-poor; typically, the equivalent of 1.2 full-time jobs. Their employment, however, often limits their ability to take time off from work and to therefore regularly attend parent-teacher conferences and school events (Gorski, 2013). These absences may lead to pre-service and even veteran teachers to interpret nonattendance as disinterest and a lack of concern about education.

Strategies to Prevent and Combat Biases

How then to prevent this mindset from occurring with teacher candidates? It begins with conversations and self-reflection. It is about awareness, shrinking away from a “not me” attitude to the introspection of facing the biases each of us holds. It means taking online tests for hidden

bias and sharing with peers how our beliefs about ethnicity, religion, and race were expressed in our homes.

Activities that teacher candidates participated in included whole and small group discussions about topics of diversity, acceptance, and culture. They took the Implicit Association Test (IAT), (Southern Poverty Law Center, 2020), and completed and shared reflective questionnaires from Terrell and Lindsey's *Culturally Proficient Leadership* text (Lindsey, 2009). They created asset maps (Borrero, 2017), and engaged in reflective journaling.

Results and Discussion

It would be naïve to presume that several weeks of activities might undo years of indoctrination and ingrained ideologies. However, this particular cohort did at the least, collectively express that by the end of the semester, they were more open-minded and less judgmental toward others. "Someone has said that it requires less mental effort to condemn than to think" Goldman, 1917, pg. 56). They were able to revisit their mock edTPA prompt responses and to identify deficit language that exuded biases or misconceptions.

Ideally, it would be most advantageous for children to be reared free of bias and prejudice. In the meantime, we can integrate culturally responsive practices within methods courses and enlighten our teacher candidates through honest and reflective practices.

References

- Asset Based Approaches*. (2018). Retrieved from A Better Way::
<http://www.betterway.network/asset-based-approaches>
- Borrero N. B. (2017). Enacting culturally relevant pedagogy: asset mapping in urban classrooms. *Teaching Education*, 279-295.
- Goldman, E. (1917). *Anarchism and Other Essays*. New York: A.C. Fifield.
- Goodspeed, T. O. (2016). Untangling the Soft Skills Conversation. *Inter-American Dialogue*, 1-11.
- Gorski, P. (2013). *Reaching and Teaching Students in Poverty: Strategies for Erasing the Opportunity Gap*. New York: Teachers College Press.
- Lindsey, R. B. (2010). *Culturally Proficient Education: An Asset-Based Response to Conditions of Poverty*. Thousand Oaks: Corwin.
- Lindsey, R. D. (2009). *Culturally Proficient Leadership*. Thousand Oaks: Corwin Press.
- NYU Steinhardt. (2018, October 29). *An Asset-Based Approach to Education: What it is and Why it Matters*. Retrieved from Teacher Education Reinvented:
<https://teachereducation.steinhardt.nyu.edu/an-asset-based-approach-to-education-what-it-is-and-why-it-matters/>
- Oxford Dictionary. (2020). *asset*. Retrieved from Lexico:
<https://www.lexico.com/en/definition/asset>
- Platt, A. (1977). *The Child Savers: The Invention of Delinquency*. Chicago: University of Chicago Press.
- Poverty USA. (2018). *Poverty Facts - The Population of Poverty USA*. Retrieved from
<https://www.povertyusa.org/facts>

- Rosenthal, R. & Jacobson, L. (1966). Teachers' Expectancies: Determinants of Pupils' IQ Gains. *Psychological Reports*, 115-118.
- Schubert Center for Child Studies. (2014, November). *Play, Implicit Bias and Discrimination in Early Childhood: Implications for Child Development*. Cleveland: Schubert Center for Child Studies.
- Southern Poverty Law Center. (2020). *Test Yourself for Hidden Bias*. Retrieved from Teaching Tolerance: <https://www.tolerance.org/professional-development/test-yourself-for-hidden-bias#:~:text=Psychologists%20at%20Harvard%2C%20the%20University,world%E2%80%94to%20measure%20unconscious%20bias.>
- Spring, J. (2007). *Deculturalization and the Struggle for Equality: A Brief History of the Education of Dominant Cultures in the United States*. New York: Routledge.
- The University of Memphis. (2019, September 7). *Comparison Between Asset and Deficit Based Approaches*. Retrieved from Engaged Scholar: <https://www.memphis.edu/ess/module4/>
- Trustees of Columbia University. (2019). *NCCP*. Retrieved from National Center For Children in Poverty: <http://www.nccp.org/>
- U.S. Department of Education. (2016, July). *The State of Racial Diversity in the Educator Workplace*. Retrieved from Department of Education United States of America: <https://www2.ed.gov/rschstat/eval/highered/racial-diversity/state-racial-diversity-workforce.pdf>
- White, B. P. (2016, April 19). *Beyond a Deficit View*. Retrieved from <https://www.insidehighered.com/views/2016/04/19/importance-viewing-minority-low-income-and-first-generation-students-assets-essay>

Performance and Attitude in Relation to Gender in a Computer Aided Developmental Math Class

Dr. Parveen Ali

As the 21st century has progressed, state legislators are demanding higher education institutions be more accountable for successful remediation of developmental math students (Cafarella, 2016; Wong, 2013). There has been increasing frustration regarding the high number of developmental studies students and the cost of serving them. Teaching developmental courses using traditional methods, as most students experience in high schools, are likely ineffective in engaging students (Twigg, 2009). Educators are concerned about the best way to serve the diverse needs of these students and are pursuing comprehensive reform and redesign efforts by using effective technology. In a traditional math classroom, a math teacher demonstrates procedures to solve a math problem from a math lesson on board. Students follow the same procedures using the same concepts to solve their homework or drill assignments. This method of math instruction is continued day after day (Ferguson, 2006). This rote memorization of procedures treats all students the same even though they may have different learning styles and different motivations to learn. It is ineffective in engaging students and providing adequate individual assistance (Ferguson, 2006; Twigg, 2009). The traditional class instruction by developmental math faculty at many community colleges and universities has been replaced by individualized computer-assisted instruction. One of the computer-assisted redesigns is the Emporium Model which was first developed by Virginia Tech in 1999 (Wilder & Berry, 2016). The Emporium Model eliminates all lectures and relies heavily on instructional software, interactive tutorials, practice exercises, and online quizzes (Twigg, 2003). Twigg (2011) describes four core principles of the Emporium model's success, 1) students spend the bulk of their course time doing math problems, 2) students spend more time on concepts they do not understand and less time on those they have mastered. 3) students get assistance and instant feedback when they need it, 4) students are required to do the math.

Students are placed in developmental math classes based on their math placement scores which they usually take during their freshmen orientation. When students start an Emporium Model developmental math course, they must take an initial assessment test from the software. This test assesses what students know or do not know from the course contents. The software then guides students from where they are and leads them to where they need to be (Dittoe, 2002).

Students in a developmental math class often have self-defeating attitudes toward math resulting from their negative experiences with this subject (Dogbey, 2010). There are many definitions of attitude. Kislenko et al. (2007) and Triandis (1971) define attitude as thoughts, feelings and behaviors. Neale (1969) defines attitude as “a liking or disliking of mathematics, a tendency to engage in or avoid mathematical activities, a belief that one is good or bad at mathematics, and a belief that mathematics is useful or useless.” Since attitudes influence persistence in mathematics, they are important in students’ performances (Tapia, 1996). Several studies on attitude and performance also indicate that students’ attitudes toward math influence their performance (Awang et al., 2013; Hodges & Kim, 2013; Ali & Dawkins, 2011; Manoah et al., 2011).

While the research on student attitudes toward math in the traditional classroom is quite vast, the Emporium math classroom model is non-traditional (Bishop, 2010). This study is

important because it seeks to add to the body of research on the Emporium-designed math model and its effect on attitudes and achievements of developmental students.

The current study focuses on:

- The development of an instrument that measures developmental students' attitudes toward computer aided (Emporium Model) math instruction.
- The exploration of whether student attitude changes after taking an Emporium Model developmental math course.
- The impact of course performance on student attitude towards Emporium Model math learning.
- The investigation of whether attitude and performance differ by gender.

The participants in the study include students enrolled in two Emporium-designed developmental math courses taught by various developmental math instructors from a rural state university in Pennsylvania. The sample consists of 150 participants. One hundred-forty-three (95%) were first-year students and seven were sophomores. The gender composition of the sample was 72 (48%) male and 78 (52%) female. The median age was 18, and the race distribution of the sample was 101 (67.3%) Caucasian, 32 (21.3%) African American, 8 (5.3%) Hispanic, 4 (2.7%) Asian, and 5 (3.3%) other.

The instrument consists of 28 Likert-type questions along with four demographic questions. Students answer each question on a scale of 1 through 5. One means "do not agree at all" and five means "strongly agree." There are four demographic questions. Responses from negatively worded items were reverse coded before analysis. The higher the score, the more positive the attitude towards Emporium-designed math learning. The reliability (Cronbach's Alpha) of the instrument is 0.901 for the pre-attitude and 0.947 for the post-attitude surveys, which indicates good reliability of the instrument (Pallent, 2016). The survey was conducted on the first day of developmental math classes to determine students' pre-attitude and on the last day to determine post-attitude toward Emporium-designed math learning.

A paired-samples t-test was conducted to evaluate the impact of attitude before and after taking the Emporium math courses. Out of 28 items on the attitude instrument, 10 show a statistically significant increase after taking the Emporium model math course. They are shown on the table on the next page.

Pair	Item	Sig. (2-tailed)
Pair-3	I can work at my own pace using the Emporium model	0.035*
Pair 13	I learn math better from working in a group in a traditional classroom, which I believe is missing in the Emporium model.	0.000*
Pair 16	I learn many of mathematical techniques to solve a math problem from the Emporium model.	0.013*
Pair 17	I prefer to seek help from a tutor or peers, NOT from a computer math program when I struggle with math.	0.004*
Pair 18	I think taking a math course by using a computer is difficult.	0.002*
Pair 19	I have serious concerns regarding the Emporium model learning environment.	0.000*
Pair 22	I prefer doing math using paper and a pencil in a traditional math classroom.	0.003*
Pair 23	I do prefer reading hardcopy (paper) books over reading on a computer.	0.000*
Pair 25	Asking questions in a traditional math class improves my math ability.	0.027*
Pair 26	In the Emporium model, I do not have to worry as much before a math test.	0.016*

A one-way between groups analysis of variance (ANOVA) was conducted to assess the relationship between students' attitudes about the Emporium model (Emporium Attitude post, 28 item questionnaire scores) and grades in the class. Grade consisted of five levels (F=0, D=1, C=2, B=3, A=4). There were no statistically significant differences at the $p < 0.05$ in the Emporium post-total score between and within the five grade levels. Independent-sampled t-tests were conducted to compare the pre- and post-total attitude scores for males and females. The tests revealed that males and females did not differ in their pre- or post-attitudes. Similarly, another independent t-test was performed to test the level of significance between males and females in their course performance. The data indicated no significant difference between genders in their post-course performances and pre- and post-attitudes.

Findings from this study contradict most of the studies of the traditional classroom model which have suggested that female students are not as successful in math as male students and that male students have better attitudes toward math, suggesting these findings need further exploration. However, there are several studies that have similar results. Hargreaves &

Swinnerton's (2008) study on gifted and talented girls on a mathematics test demonstrates that girls did not underperform compared with boys and that stereotype threat did not play a part. Georgiou & Kalavana (2007) had similar findings from a sample of eight graders. Their study found no differences in performance and attitude between boys and girls. Similarly, Utsumi & Mendes (2000) research on adolescent students revealed no statistically significant differences in math attitudes associated with gender. Case studies and other qualitative research with similar class formats (computer-aided) could shed more light on Emporium's correlation with attitude and performance as well as the impact of gender. Moreover, further research could use a larger sample of developmental math students.

The results of the study suggest that male students in a technology-based math class are not necessarily better than female students in their math performances or attitudes. Findings from this study indicate that non-cognitive factors and classroom environment are as important as cognitive factors in student's attitude and performance. Math performance and attitude of both male and female students will likely improve by better teaching methods and more motivated teachers who invest in non-cognitive factors and a classroom environment that promotes math learning and attitudes. This study may improve educators' bias that male students outperform females in technology-based math classrooms. Educators confidence in female students can encourage female students to pursue more STEM careers. Collaborative efforts from educators and researchers are essential to support gender invariant math attitudes and achievements. The findings from this study may broaden the research on attitudes and performance related to computer-aided math learning.

This study is based on students who took developmental math courses at a rural university in Pennsylvania where the student population is predominantly white. Therefore, the findings from this study may have limited generalizability.

References

- Ali, P., & Dawkins, S. (2011). Math attitude and performance in college. *Academic Exchange Quarterly*, 15(2), 75-81. URL: <http://rapidintellect.com/AEQweb/>.
- Awang, M. M., Ahmed, A. R., Baker, N. A., Ghani, S. A., Yunus, A. N. M., Ibrahim, M. A. H., Ramalu, J. C., Saad, C. P., & Rahman, M. J. A. (2013). Students' attitudes and their academic performance in nationhood education. *International Education Studies*, 6(11), 21-28. doi: 10.5539/ies.v6n11p21
- Bishop, A. R. (2010). The effect of a math emporium course redesign in developmental and introductory mathematics courses on student achievement and students' attitudes toward mathematics at a two-year college. (Order No. AAI3437888, *Dissertation Abstracts International Section A: Humanities and Social Sciences*, 526. Retrieved from <https://aquila.usm.edu/cgi/viewcontent.cgi?article=1497&context=dissertations>
- Cafarella, B. (2016). Acceleration and compression in developmental mathematics: Faculty viewpoint. *Journal of Developmental Education*, 39(2), 12-19. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1117729.pdf>

- Dittoe, W. (2002). Innovative models of learning environments. *New Directions for Teaching and Learning*, 2002(92), 81-90. doi: 10.1002/tl.82
- Dogbey, G. (2010). *Attitude of community college developmental students toward mathematics and their perception of mathematically intensive careers*. Doctoral thesis, College of Education, Ohio University. Retrieved from <https://search.proquest.com/docview/746482624>
- Ferguson, K. (2006). Inquiry based mathematics instruction versus traditional mathematics instruction: The effect on student understanding and comprehension in an eighth grade pre-algebra classroom. (Master dissertation). Retrieved from https://digitalcommons.cedarville.edu/cgi/viewcontent.cgi?article=1025&context=education_theses
- Georgiou, S. N., Stavrinides, P., & Kalavana, T. (2007). Is Victor better than Victoria at maths? *Educational Psychology in Practice*, 23(4), 329–342. doi: 10.1080/02667360701660951
- Hargreaves, M., Homer, M., & Swinnerton, B. (2008). A comparison of performance and attitudes in mathematics amongst the ‘gifted’. Are boys better at mathematics or do they just think they are? *Assessment in Education: Principles, Policy & Practice*, 15(1), 19–38. doi: 10.1080/09695940701876037
- Hodges, C. B. & Kim, C. (2013). Improving college students’ attitude toward mathematics. *TechTrends*, 57(4), 59-65. doi: 10.1007/s11528-013-0679-4
- Kislenko, K., Grevholm, B., & Lepik, M. (2007). “Mathematics is important but boring”: Students’ beliefs and attitudes towards mathematics. In C. Bergsten, B. Grevholm, H.S. Masoval, & F. Ronning (Eds.), *Relating practice and research in mathematics education. Proceedings of NORMA 05* (pp. 349-360). Trondheim, Norway: Tapir Academic Press. Retrieved from <http://tu.diva.portal.org/smash/get/diva2:1005253/FULLTEXT01.pdf>
- Manoah, S., Indoshi, F., & Othuon, L. (2011). Influence of attitude on performance of students in mathematics curriculum. *Educational Research* 29(3), 965-981. Retrieved from <https://www.interestjournals.org/articles/influence-of-attitude-on-performance-of-students-in-mathematics-curriculum.pdf>
- Neale, D. C. (1969). Role of attitudes in learning mathematics. *Arithmetic Teacher*, 16, 631–640. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eir&AN=519583585&site=ehost-live>
- Pallant, J. (2016). *SPSS survival manual: a step by step guide to data analysis using IBM SPSS*. McGraw Hill.

- Tapia, M. (1996, November 6). *The attitudes toward mathematics instrument*. Paper presented at the Annual Meeting of the Mid-South Educational Research Association, Tuscaloosa, AL. Retrieved from <https://files.eric.ed.gov/fulltext/ED404165.pdf>
- Triandis, H.C. (1971). *Attitude and attitude change*. New York, NY: Wiley.
- Twigg, C. A. (2011). The math emporium: Higher education's silver bullet. *Change: The Magazine of Higher Learning*, 43(3), 25-34. doi: 10.1080/00091383.2011.569241
- Twigg, C. A. (2009). Using asynchronous learning in redesign: Reaching and retaining the at-risk student. *Journal of Asynchronous Learning Networks*, 13(3), 147-155. Retrieved from <https://files.eric.ed.gov/fulltext/EJ862363.pdf>
- Twigg, C. A. (2003). Models for online learning. *Educause review*, 28-38. Retrieved from <https://blendedtoolkit.wisc.edu/wp-content/uploads/2014/04/twigg.pdf>
- Utsumi, M., & Mendes, C. (2000). Researching the attitudes towards mathematics in basic education. *Educational Psychology*, 20(2). doi: 10.1080/713663712
- Wilder, S, & Berry, L. (2016). Emporium model: The key to content retention in secondary math courses. *Journal of Educators Online* 13(2), 53-75. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1106734.pdf>
- Wong, A. (2013). Modularizing remedial mathematics. *PRIMUS*, 23(3), 257-273. doi: 10.1080/10511970.2012.753964

Educating Underprepared Professionals during COVID-19: A Case Study

* Jesse M. Redlo, EdD, MS

*Elizabeth A. Kiss, DNP, FNP-BC, RN

**Kirsilyn Harris, BS Candidate

*Author Note

St. John Fisher College, Wegmans School of Nursing, Golisano Institute for Developmental Disability Nursing, 3690 East Avenue, Rochester, NY 14618

**Author Note

SUNY Brockport, Department of Chemistry and Biochemistry, 350 New Campus Drive, Brockport, NY 14420

Abstract

The Coronavirus pandemic (COVID-19) has created a need for a workforce that interacts with the public every day to be educated on how to use personal protective equipment appropriately and practice CDC guided infection control procedures effectively in a very short amount of time. The individuals who make up a large portion of the workforce that occupy these essential positions typically do not have a college education. Educating adult learners has stark differences from educating children, and becomes more complex when working with underprepared and often, historically underserved populations who typically lack any level of formal, higher education experience. The online infection prevention course created by the Golisano Institute for Developmental Disability Nursing for Direct Support Professionals during COVID-19 was used as a case study to better understand the unique needs of adult learners with no formal college education and how to effectively meet those needs in a virtual, socially-distanced platform. It was identified that underprepared adult learners require their learning to be applicable to their current circumstances. Utilizing material that is condensed, and broken down into small portions of time, and the implementation of gaming elements showed greatest success in capturing student engagement and retention.

Educating Underprepared Professionals during COVID-19: A Case Study

Beginning in March 2020 the United States witnessed the rapid spread of a virus that has since been coined COVID-19. This virus quickly overwhelmed hospitals in New York City, a place that would be known as the first epicenter of the virus in the United States. There was a mass proliferation of misinformation due to conflicting reports about what measures were necessary to maintain public safety. To slow or stop the spread of the virus the economy was shut down which resulted in many people being furloughed, laid off, or encouraged to work from home. This left those who were deemed essential workers, largely those employed in the service industry, implementing rapidly changing standard operating procedures to reduce the rate of infection. The individuals who make up a large portion of the workforce that occupy these essential positions typically do not have a college education. According to the most recent statistics from the 2020 census 57% of the labor force in America, which the Census qualifies as 25 years and older, consists of persons with no formal college education (Census, 2020).

Unfortunately, the laborers who are without a college education are also some of the hardest hit in the COVID-19 recession (Pew Research, 2020). The workers that make up this demographic are at about a 15% unemployment rate, which is better than double the unemployment rate of 7.2% for those who have a bachelor's degree (Pew Research, 2020). Some of the jobs they may hold include food-service workers, wait staff, janitorial staff, and nursing aides. These workers interact with the public every day, and as such need to be educated on how to use personal protective equipment appropriately and practice CDC guided infection control procedures effectively in a very short amount of time. This begs the question of how to go about educating such a significant number of people in such a short period.

This article will use the online infection prevention course created by the Golisano Institute for Developmental Disability Nursing for Direct Support Professionals during COVID-19 as a case study to better understand the unique needs of adult learners who have no formal college education. This case study is necessary to better understand the unique needs of adult learners with no formal college education and how to effectively meet those needs in a virtual socially distanced platform.

Theoretical Foundation

Educating adult learners has stark differences from educating children, as evidenced by the distinction between the terms 'andragogy', meaning to teach adults and 'pedagogy', meaning to teach the child (Bull, 2013). Andragogy acknowledges the need for adult teaching strategies to be learner-centered, not teacher-centered, wherein the activities of the learner take precedence over the lecturing or other traditional teaching methods of the instructor (Bull, 2013). Adult learning becomes more complex when working with underprepared and often, historically underserved populations who typically lack any level of formal, higher education experience (Yadusky, Kheang, & Hoggan, 2020). Social development theory emphasizes interaction between learners and active engagement with learning materials as keys to effective learning (Abtahi, Graven, & Lerman, 2017). Social development theory is a logical fit as a theoretical foundation for teaching adults who are underprepared for higher education, given its alignment with the principles of adult learning characteristics, as described above.

Active learning strategies are shown to be effective with educating adult learners, particularly adult learners who have preconceived notions of key learning outcomes through work/life experience (Yadusky et al., 2020). Active learning strategies can include activities which allow for social interaction and/or activities where the learner must engage with the content: discussion forums, interactive case studies, and games are some common examples (Brame, n.d.). Adult learners often engage in a postformal stage of reasoning, wherein the learner merges their personal ideas, such as ethics and worldviews with analytical thought (Scott-Janda & Karakok, 2016). Similarly, one's preexisting ideas can greatly impact what they learn from an educational experience (Riegler, 2015). This makes it necessary to design learning experiences for adult learners that allow for their personal views to be exposed and to be mixed with factual, analytical thought. In the case study detailed later in this article, the course creators accomplished this task through an evolving case study activity within their course, which incorporated characters of diverse backgrounds to help make the situations more relatable to broad audience (Kiss & Redlo, 2020).

From a theoretical perspective, the merging of social development theory via social interaction, and constructivism (wherein learners have the opportunity to form meaning) leads to an effective educational experience (Redlo, 2020). The course discussed in the following section made use of this theoretical perspective through the use of interactive, real life-scenarios to help essential front-line workers perform their job duties more safely (Kiss & Redlo, 2020). This unique application of theory to inform the practice of educating underprepared direct support professionals during crisis could be applied to other fields of practice.

Case Study: An Infection Prevention Course

The Center for Disease Control (CDC) has identified individuals with a disability who also has an underlying medical condition to be at the greatest risk for severe illness from COVID-19 (CDC, 2020). Those identified as being at the highest risk were those with limited mobility who are unable to avoid close contact with others (such as their direct support providers and family members), people with difficulty following commands or understanding preventative measures (like hand washing and social distancing), and people who cannot communicate signs and/or symptoms of illness (CDC, 2020). It was recommended by the CDC that direct support providers take additional steps to protect people with disabilities during COVID-19. The CDC recommended training and education on the appropriate use of Personal Protective Equipment (PPE) and infection prevention for individuals who are direct support caretakers who work in a group home setting and care for individuals who have a disability (CDC, 2020). To meet this need the Golisano Institute of Developmental Disability Nursing (GIDDN) at St. John Fisher College worked with their local community partners to develop an online infection prevention course for direct support professionals. The goal of the course was to provide educational resources on infection prevention and the proper use of PPE to direct support personnel (Kiss & Redlo, 2020).

The course was designed around four modules: (1) The chain of infection: explained the basics of how infections are spread, (2) Signs of illness and personal protection: focused on identifying illness in a patient, (3) Vulnerability: discussed what makes a person susceptible and vulnerable to infection, and module (4) unique considerations: reviewed special considerations

specific to COVID 19. All of these modules were designed around one evolving case study that was a thread throughout each of the lessons. The case study allowed for the students to apply a real-life scenario to the application of clinical problems. The case study also allowed students to build upon previous knowledge and connect theory to practice in stages (West, 2012).

The course content was delivered using ‘Thought Industries’, a learning management system (LMS). The content was organized into bite-sized pieces of content, enabling the user to conceptualize and move easily through the information. The course authors used engaged the learner through multiple means including readings, videos, interactive assessments, case study analysis, and games (Kiss & Redlo, 2020). The use of games allowed the material to be broken down into manageable bits of information, and helped to increase learner motivation (Young, 2016).

Feedback was gained on the course content through the use of internal and external expert feedback from individuals within SJFC, GIDDN, and the surrounding community of staff members at surrounding group homes. Based on feedback changes were made to the course, such as translation of the course into Spanish, and updating of the case study to make it more realistic to group home experiences. As the course continues to be disseminated, the authors seek feedback, and seek opportunities for further development.

Implications

With such a high percentage of the American labor force without any formal higher education, it falls to the educators to determine how best to impart important information to them. As stated previously, educating adult learners requires a different kind of approach than to educating children. The case study described above has given invaluable insights into further addressing the needs of these underserved individuals. Firstly, these individuals require their learning to be applicable to their current circumstances. Working professionals, especially those working for minimum wage, which may or may not qualify for benefits, don’t have all that much extra time to spend learning the material. They need the information as condensed as possible, for both an impactful and expedient learning experience. If there is too much filler information, then the imperative information may not be retained because it won’t be easily identified. An approach that brooked much success in the case study was integrating games in the learning process. This implies that the case study did, in fact, prove that the activities of the learner had a greater impact on the learning process for this demographic than what is considered traditional learning.

Other proof to support this theory can be found in the non-traditional programs that some schools offer where the course or courses taken will result in different certificates that may aid in acquiring promotions. One other issue that non-traditional adult learners may encounter as they return to a classroom, virtually or otherwise, is that they may not have the same tools to reinforce the learning that occurs in the classroom that a traditional student may be well-versed in. As with any skill, it requires upkeep and practice to maintain the neural pathways, schemas and habits that are created as individuals learn how to best process and retain information in their long and short term memories. In this vein, the self-paced design showed in the case study is a best practice approach to help level the playing field for non-traditional adult learners.

References

- Abtahi, Y., Graven, M., & Lerman, S. (2017). Conceptualizing the more knowledgeable other within a multidirectional ZPD. *Educational Studies in Mathematics*, 96(3), 275–287. <https://doi.org/10.1007/s10649-017-9768-1>.
- Brame, C.J. (n.d.). *Active Learning*. Vanderbilt Center for Teaching. <https://cft.vanderbilt.edu/wp-content/uploads/sites/59/Active-Learning.pdf>.
- Bull, B. (2013). A primer on the three "gogies" #pedagogy #heutagogy #andragogy. *Etale 0 Exploring Futures & Innovations in Education*. Retrieved from <https://etale.org/main/2013/04/23/a-primer-on-three-gogies-pedagogy-heutagogy-andragogy/>.
- Bureau, U. S. C. (2020, March 30). *Labor Force Participation by Level of Education*. The United States Census Bureau. <https://www.census.gov/library/visualizations/2020/comm/labor-force-by-education.html>.
- Center for Disease Control and Prevention, (2020, April 7). *People with Disabilities*. Retrieved April 2020, from: <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-disabilities.html>.
- Kiss, E.A., & Redlo, J.M. (2020 – In-Press). Meeting the need: Creation of an online infection prevention course for direct support professionals during COVID-19 [Manuscript submitted for publication]. Golisano Institute for Developmental Disability Nursing, St. John Fisher College.
- Kochhar, R. (2020, August 26). *Unemployment rose higher in three months of COVID-19 than it did in two years of the Great Recession*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/06/11/unemployment-rose-higher-in-three-months-of-covid-19-than-it-did-in-two-years-of-the-great-recession/>.
- Redlo, J.M. (2020). *Faculty perceptions of effective online teacher training: A phenomenological approach* (Publication No. 28024115) [Doctoral Dissertation, American College of Education]. ProQuest Dissertations Publishing.
- Riegler, A. (2015). *What does the future hold for radical constructivism?* https://doi.org/10.1007/978-1-4614-0914-4_13.
- Scott-Janda, E., & Karakok, G. (2016). Revisiting Piaget: Could postformal thinking be the next step? *Philosophy of Mathematics Education Journal*, 30(1), 1–11. Retrieved from <http://people.exeter.ac.uk/PErnest/>.
- West, C. U. (2012) Unfolding case studies in pre-registration nursing education: Lessons learned. *Nurse Education Today*, 32(5), 576-580.
- Yadusky, K., Kheang, S., & Hoggan, C. (2020). Helping underprepared students succeed: Minimizing threats to identity. *Community College Journal of Research and Practice*, 1-14. <https://doi.org/10.1080/10668926.2020.1719939>.
- Young, J.E. (2016). Can library research be fun? Using games for information literacy instruction in higher education. *Georgia Library Quarterly*, 53(3), 1-7. URL: http://digitalcommons.kennesaw.edu/glq/vol53/iss3/7?utm_source=digitalcommons.kennesaw.edu%2Fglq%2Fvol53%2Fiss3%2F7&utm_medium=PDF&utm_campaign=PDFCoverPages