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**STUDENT CENTERED LEARNING
IN UNDERGRADUATE PRESERVICE TEACHERS**

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Abstract

The hypothesis of this article and the research study that it describes is that if we can make teaching and learning more student-centered then our elementary, secondary, and university students will learn more academic information and skills, gain more social skills, and develop psychological strengths and skills. Our students will know how to treat people more effectively, understand academic material more deeply, think more critically, and become more productive citizens of their communities, states, nations, and the world. This particular study was developed to assess how university students feel about attempts to engage them in more student-centered ways. Results from this process indicates that students achieved more and correlated their success to the student-centered experiences developed for and with them during their classes. Based in the following student-centered elements, the results of this study, when added to previous studies, offer positive ideas to the future or education. The student-centered elements for this study included: 1. Constructivist activities, 2. Metacognitive reflections, 3. Student and professor partnerships, 4. Collaborative efforts, 5. Authentic assessments, 6. Active and on-going student engagement in the work to learn, 7. Explicit teaching of important skills, 8. Student control of their learning, 9. Peer, mentor, and professor feedback, and 10. Learning based on student effort.

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1. Introduction

When my daughter, Kati, was in her last year of high school, she came to me and asked if I would read and give her some feedback on an essay she had written. I was thrilled that she had considered me, so, of course I read her essay. Kati saw the look on my face as I finished her essay, and she asked, “Is it that bad?” I replied, “Kati, this essay sounds like it was written by your teacher, not you. I do not hear your voice in here at all.” “Dad,” she said, “of course it has her voice in it, I want to get an A on the essay.” The next day, I asked the students in one of my pre-service teacher education classes what they thought of my daughter’s appalling response. They laughed at me, and told me they all did the same in high school, and, even worse, half related they still did it in college. The other half of the class told me that it really depended on the professor. Since then I have asked many students the same questions, and I continue to receive similar responses. No matter what the truth is about what teachers really want, the majority of students (about 300 students) I have asked have responded similarly as my daughter and that first class of future teachers. This means a significant group of students believe two things: 1. Grades count more than learning; 2. To earn great grades students want, they need to give the teacher what s/he wants. Education, for these students, is a teacher – and curriculum – centered endeavor.

Wagner (2014), in his book, *The Global Achievement Gap: Why Even Our Best Schools Don’t Teach the New Survival Skills Our Children Need—and What We Can Do About It*, tells us that even our best schools are not preparing students for their futures because we are so focused on the curriculum and passing standardized tests (p. 8-9). Sousa (2017) reminds us that the point of teaching is to get students to store their new learning and new skills in long term memory in such a way that it can be easily retrieved when needed (p.86-87). Emotions matter, process matters, engagement matters, empathy matters, the arts matter, critical thinking matters, and intuition matters as much as, if not more than, does logic and curriculum. Fitzgerald and Laurian (2013) add that how people treat each other also matters in school and after graduation (p. 344). They point out that we have better and more effective ways to work with and treat each other: love, support, care, empathy, encouragement, and understanding will improve our world. Johnson, Johnson and Holubec (2002) have developed their cooperative learning system to teach students to be more cooperative and effective citizens (p. 185-195).

In 2016, Laurian-Fitzgerald and Fitzgerald implemented a study with a face-to-face class in which they implemented student-centered teaching learning techniques and measured the effects on the students’ Grit (Duckworth, 2016) and Growth Mindset (Dweck, 2016). The results revealed that students were extremely positive about the process, with all 37 students indicating they felt better prepared utilizing student-centered techniques. Students also indicated they believed the combination of peer and professor feedback helped them to learn more deeply in the class.

In the present study, the researchers assessed opinions of students in a hybrid class of the effort of their professor to engage students in a more student-centered teaching approach. The class was developed using the ten concepts connected to student-centered teaching recommended by Laurian-Fitzgerald, Fitzgerald, Popa, and Bochi (2018, p. 166-167).

1.1. So-Called Soft Skills

Robinson (2017) has observed that many schools all around the world are continuing to teach students meet standards and pass standardized tests that in many cases ignore student needs, skills, talents, and interests. There are many problems with this process, including the reality that there is very little proof, after more than 25 years of implementation, that there is some real connection with passing these tests and success in life. Ken Robinson (2017) believes that schools actually are depriving students of the ability to be curious and creative. In one of his TED talks (2010) he states that, “What we need is not an evolution in education, what we need is a revolution.” He thinks our educational systems are broken, and he believes they are beyond repair. We need, in his view, to “disenthrall” ourselves of the assumptions we are using to perpetuate the accountability mentality in education today.

Sousa (2017) believes we should teach to the whole brain, meaning we need to help our students use all of the aspects of learning and processing information so that students develop all of their capacities. Caine and Caine (2011) believe the more educators can use the natural functions of the brain as they relate to learning, the more effective teachers and students will become. Sousa and the Caines point out that the brain functions as an integrated system, thus, when we discuss teaching to a part of the brain, it is really an inaccurate description of how the brain functions. But the point is well taken, educators should think about how to take advantage of the natural integration of the brain. These authors also point out the importance of dealing with the emotional aspects of teaching and learning.

1.2. Student-Centered Learning

It is one thing to say that teaching and learning should be student-centered; it sounds nice, and it seems to be logical. The reality is, though, that our K – 12 educational systems have not been built around the students, schools have been developed to meet the standards and the curriculum. Ravitch (2016) has written:

The state and federal policies of the recent past have aimed to turn education into a competition for higher test scores, despite the fact that testing always favors the advantaged over the disadvantaged. The creation of competing publicly funded sectors – one public, the other one non-public – has not improved education.

In most of our universities, teaching is built around programs or individual professor goals. A student told me this year, “Many professors (in her Ivy League college) do not care about teaching; they are mainly interested in getting to their own research projects.” A friend who was a visiting professor for two years at another prestigious university explained to me how he had to ensure that there were only so many A’s and so many B’s, etc., the grading system has not been developed to indicate student learning, it has been developed to show how difficult is it to earn an A at the university, so that it maintains its prestige. At least at the K-12 level, we would argue that teaching and learning should be centered on the students. Students should be at the center of the process. These are not new ideas, people like John Dewey (1910) felt that education should be an experiential process, one in which students are preparing themselves for their real adult lives, not about creating test takers. Armstrong (2012) agrees and advocates that student learning should be more experiential. He also believes teachers should work with their students through their strengths instead of working with students from a deficit model. Armstrong tells us that students and schools should adapt to each other, as opposed to the students doing all of the adapting. Caine and Caine (2011)

suggest it is time to develop teaching and learning practices based on student needs, interests, and goals. They write: “In short, education needs to find a way to access the inherent capacities of students” (p. 24).

Caine (2018) invites us to think about giving our students more authority, more responsibility, and more choices in their education. Caine asks the question, “What happens if a learner’s preferences, likes, and dislikes play no part in the training and development?” (p. 10)? We have all heard the saying, “We need to be the guide on the side,” for our students. It has become almost a trite saying, not because it is meaningless, but because we do not know how to change our roles as educators. Slowly, more and more teachers are rebelling against the one size fits all mentality (Robinson, 2017). Teachers are smiling at their administrators about reaching the almighty standards, then, many of them are doing what they know is best for their students. Many administrators and teachers, though, are still afraid of losing their jobs due to test scores. The irony in all of this is that people who are talking about raising standards are actually narrowing the curriculum and minimizing what students can learn.

The irony is that the research about student-centered techniques indicates that students learn more curriculum, learn it more deeply, and remember it longer (Armstrong, 2012, p. 12-18; Bruner, 1961, p. 2-8; Caine and Caine, 2011, p. 74-82; Fitzgerald & Johnson, 2013, p. 70; Johnson, Johnson, & Holubec, 2002, p. 75-94; Kolb, 1984, p. 25-38; Kraus and Boss, 2013, p. 1-12; Sousa, 2017, p. 153-170; Zhao, 2012, p. 235-250). In other words, there is a great deal of evidence out there suggesting that instead of raising standards, the rush to standardize American education is actually lowering standards. Ravitch (2016) was one of the people pushing for the No Child Left Behind movement in the USA, has come to realize that the good intentions of so many people missed the mark. Instead of holding students accountable, we should be teaching them, we should be inspiring them, and we should be supporting them in their quest to grow into effective adults and citizens of our nation and the world.

In their research Popa, Bochis, Laurian-Fitzgerald, and Fitzgerald (2018) studied the implementation of mentors in a cooperative learning classroom in a hybrid teacher preparation program. They wrote, “The results indicated that the leadership roles of the student mentors made the process complex and rewarding” (p. 386). The results from this study indicated that when students are given real leadership roles in their classes, they take on the responsibilities very seriously and become proud to mentor their peers who need their assistance. Their research also indicates that the students being mentored appreciate the assistance and feedback they receive from their colleagues. These results offer some interesting possibilities in face-to-face and in hybrid programs of study. The results also give educators great indications of the possibilities of cooperative learning for college and university professors and their students (Johnson & Johnson, 2013).

In her work with students and teachers, Novak assists educators in implementing the concepts of universal design for learning (UDL). She defines UDL in the following way: “UDL is thoroughly knowing the concept you’re going to teach and presenting that concept in different ways while engaging the students and encouraging them to express their knowledge in different ways” (Novak, 2016, p. 13). The main idea behind UDL is that educators proactively eliminate barriers to learning so that all students master the curriculum. That means teachers develop the curriculum, implement the curriculum, and assess students in multifaceted ways in accordance with students’ needs, interests, talents, learning profiles, and developmental levels. In other words, learning is about and for the students. There is enough evidence to show us that the “one-size-fits-all” does not work for many students (Robinson, 2017). As Armstrong (2012) explains, it makes little sense to blame students for what they do not know or cannot do. That kind

of deficit model simply does not work for too many students. Instead, UDL is a model of teaching and learning in which educators challenge all students to succeed in school and support each student in ways that effectively moves the student forward (Novak, 2016). The three pillars for UDL include: 1. Represent and present curriculum in multifaceted ways; 2. Provide multiple means of actions and expression; and 3. Provide multiple means of engagement. In this process, students must work with the teacher and their peers collaboratively, and the students must be given more authority, responsibility, and choices in their learning (Novak, 2016).

2. Problem Statement

The hypothesis of this article and the research study that it describes is that if we can make teaching and learning more student-centered, then our students will learn more academic information, gain more social skills, and develop psychological strengths and skills. If we are successful, our students will know how to treat people more effectively, understand more, think more critically, and become more productive citizens of their communities, states, nations, and the world. This particular study was developed to assess how university students feel about attempts to engage them in more student-centered ways. The system used to attempt to infuse student-centered techniques into the class under study was based on the 16 recommendations of Laurian-Fitzgerald, Popa, and Fitzgerald (2015, p. 93): 1. All students can and will learn in my classroom. 2. Students need to be actively engaged in their learning. 3. Students should make as many choices as possible in their learning. 4. Students need to work positively and regularly with other students in a variety of ways. 5. Students should be encouraged to be curious. 6. Students should do meaningful work most of the time they are in school. 7. Students should work on complex projects both individually and in teams. 8. Students should be independent learners, as well as good teammates. 9. The arts are an important part of helping students develop their brains and learn important curriculum. 10. Students should set goals for their learning. 11. Students should be supported to take intelligent risks in their learning. 12. Students should understand that learning depends on great efforts. 13. Students should understand their place in the world. 14. Students should display fair-mindedness, empathy, and understanding in their work with and thinking about other people. 15. Students should be supported in their efforts socially and academically by their peers and by their teacher. 16. A positive and supportive class environment is critical to student learning.

3. Research Questions

The following questions guided this study:

- How and to what extent does the implementation of student-centered techniques in a university classroom effect student attitudes and achievement?
- How do student-centered techniques affect the students in their online program?
- How does the introduction of peer mentors effect students in an online environment?

4. Purpose of the Study

The main purpose of this study was to develop, implement, and assess a student-centered approach to teaching and learning in a university weekend hybrid teacher preparation program. In their 2016 study,

Laurian-Fitzgerald and Fitzgerald implemented student-centered techniques into teaching in a traditional face-to-face setting and found that students raised their levels of Grit and Growth Mindset, earned higher grades, felt more prepared to become teachers, raised their attendance levels, and believed they learned the curriculum more deeply. In the present study, the goal was to attempt to adapt the process used in the face-to-face program to replicate that success in a weekend hybrid program in which students met on the weekend for face-to-face classes and worked online for the remainder of the classes and assignments.

5. Research Methods

The research design for this study was action research. In his 2000 book, *Guiding School Improvement with Action Research*, Sagor defines action research as, “a disciplined process of inquiry conducted *by* and *for* those taking the action. The primary reason for engaging in action research is to assist the *actor* in improving and/or refining his or her actions” (p .3). Action research is the most appropriate design for this study because the professor of the class is dedicated to become more effective as a student-centered teacher for her students in this hybrid weekend program. In order to triangulate data, this study employed both quantitative and qualitative data collecting methods. In order to assess the 10 elements developed for the student-centered teaching and learning process (Laurian-Fitzgerald & Fitzgerald, 2016), we developed the Student-Centered Teaching Survey. The survey consisted of 30 statements (3 statements for each of the 10 elements of Student-Centered Teaching). These statements were rated by the participants on a five-point Likert scale, with 1 being Totally disagree to 5 being Totally Agree. Qualitative data was collected in two ways: 1. Open ended questions: a. How effective do the teacher’s procedures were for the class? Explain your response. b. What advice do you have to make this class better? 2. The professor maintained a researcher journal in which she wrote her notes, questions, and comments from students. This process allowed for a fuller picture of what students were doing and thinking throughout the research. It also gave the quantitative results deeper meaning.

5.1. Participants

Twenty-three weekend program students agreed to participate in this study. All students are enrolled in a Kindergarten and Primary School program to become certified teachers. The weekend program participants enrolled in the weekend program for a variety of reasons. Approximately 70% of the students (16 students) work, most full-time, are married, have their own families, and many are responsible for the care of grandparents or parents. Weekend students, thus, are older than “traditional” students who are on-campus full-time students. Many weekend program students (9 students) already teaching, and they are completing their degree in order to remain certified as teachers. Some weekend program students are adding a second degree to their resume in order to change careers. Five of the participants in this study are “traditional” students in that they are younger, single, and do not work full-time. The cohort for this study is diverse in terms of age (20s to 50s), experience (never have worked full-time, are experienced teachers, or have worked in one career and are ready for a second career, etc.). All of the participants are in their second year of this three-year program. All students were enrolled in a Methods of Teaching Romanian Literature class.

6. Findings

6.1. Student-Centred Teacher Survey

The Student-Centered Teacher Survey consisted of 30 statements based on the 10 elements of student-centered learning developed by Laurian-Fitzgerald and Fitzgerald (2016). There were 3 statements for each of the 10 elements. The elements of student-centered teaching include: 1. constructivism, 2. metacognition, 3. professor-student partnership in learning, 4. collaborative learning, 5. authentic assessments, 6. active and on-going student engagement in the work to learn, 7. explicit teaching of important skills, 8. student control over some of their learning, 9. peer and professor feedback, and 10. learning based on student effort.

Participants rated each statement on a 5-point Likert scale of 1 (Totally Disagree) to 5 (Totally Agree). The mean scores for the 10 elements ranged from 4.22 to 4.71 with an overall mean of 4.57. In 8 of the 10 elements, the mean scores were 4.5 or higher: constructivism (4.61), metacognition (4.67), professor-student partnership in learning (4.64), authentic assessments (4.75), explicit teaching of important skills (4.50), student control over some of their learning (4.54), peer and professor feedback (4.59), and learning based on student effort (4.71). Two elements scored below 4.50: collaborative learning (4.22) and active and on-going student engagement in the work to learn (4.42). There were three elements in which students rated the statements with Disagree or Totally Disagree. Element 3 (professor-student partnership in learning) had 1 student Disagree; Element 4 (collaborative learning) had 5 students Disagree and 2 students Totally Disagree; and Element 6 (active and on-going student engagement in the work to learn) had 2 students Disagree and 3 students Totally Disagree. The other seven elements had no students Disagree or Totally Disagree with any statement. Thus, in 26 of the 30 statements, no students Disagreed or Totally Disagreed.

There were two statements with a mean score lower than 4: Statement 16 (In this class I was responsible for helping my peers to learn) had a mean of 3.96; Statement 24 (In this class I helped my colleagues to learn) had a mean of 3.74. In their open ended responses students wrote about their scores in this category. One participant wrote: *I am not yet a teacher, so I did not think I knew enough to help other students who were more experienced.* Another student wrote: *Since I was not a mentor, I participated in the discussions, but I did not feel like I was responsible for the group.* In this process each group was assigned a mentor who was either already a teacher or who had been working in a school for a period of time. It is also interesting to note that in this element, for Statement 4 (In this class students worked collaboratively on a regular basis) the mean score was 4.70.

The results of the data from students indicate that students worked collaboratively on a regular basis (4.70). The participants also believed their professor worked hard on for the benefit of the students: *In this class the professor worked with us as long as we needed to learn the material* (4.70); *In this class my professor assisted my learning by encouraging me to keep working until I became successful* (4.74). Students learned that effort was important (*In this class we were encouraged to believe that learning is based on student effort.* (4.74). They also indicated they were encouraged to critically think about their learning (*Students in this class were asked to think about how we learn and think.* (4.61). *In this class students were encouraged to use their intellectual strengths to show what they learned.* (4.83). Participants and the professor connected their work in class to the real world: (*I will use the material I learned in this*

class in my real world work. (4.75). They also felt that the teaching and learning process is a partnership among the professor and the students (*In this class the students and the professor were partners in the teaching and learning process.* (4.74). Finally, students believed the professor provided them with direct teaching as necessary: *In this class when we needed direct teaching, the professor provided it* (4.70). Our conclusion from the analysis of the data is that students appreciated the efforts of their professor to develop a collaborative class which was student-centered, and students believed they effectively learned the material while also developing their collaborative and critical thinking skills.

6.2. Qualitative Results

Open ended Questions: At the end of the survey, participants were asked: How effective were the teaching strategies? Explain your response. Of the 23 participants, one student was not pleased with the process used in the class. She wrote: *I did not like it because some colleagues did not follow through with their responsibilities.* The other 22 students indicated they felt the processes employed during the class were effective. Eighteen students indicated the techniques efficient. One student wrote: *The strategies were very efficient and useful for our learning.* Another student wrote: *It made it easier for us to understand the material.* Nine students indicated that the strategies encouraged students in their learning. One student wrote: *The class supported me in my individual studying, as well as teamwork.* Another student related: *Because the techniques were efficient, it made it easier for me to learn the material.* Three students related that class and homework assignments were effective because they were related to the real world. One student stated: *The assignments were important because they were connected to real life experiences for what I will do when I become a teacher.*

The second open ended asked students for advice for making the process better. Seven students wrote they suggested to repeat the techniques in all classes, because they were effective. The typical response was: *Keep doing these kinds of activities that encourage us to be active in our learning.* Another student responded: *Professors should use these kinds of techniques in all of our classes.* A third student related: *I hope that you use these ideas in our classes next year.* Twelve participants wrote ideas about having more face-to-face meetings in the weekend classes. One student wrote: *I think we learned so much from our classes together, so I think we should meet more often than we have been meeting on the weekends.* Another student related: *I do not know how you could do it, but I would like more classes face-to-face.* Another student stated: *In class, we got to know each other and we learned to work together so well. I wish we could meet more often.* Other items were written one or two times. These responses included: better feedback from peers, a more practical final exam, more frequent assignments, less frequent assignments, more materials/games, and more time for fun.

Mentors: One aspect of this class was the use of mentors for each group in the class. The students were broken into groups of four or five. For each group the professor assigned an experienced teacher of para professional to mentor their group. The mentors were asked to help the students in their collaborative work in class and for the online portion of the class. They were asked to give each person feedback for their work in class and for their progress online. Students were encouraged to ask their mentors for help in the online portion of the class. When asked to rate the statement: *I was proud to be a mentor for my group,* every mentor responded with a 5 (Totally Agree). When asked to rate the statement: *Using student mentors helped me to learn the material.* Students mean score was 4.54. The mentors and their mentees were very

satisfied with the idea of using student mentors to help the less experienced students. When asked how they felt as mentors, each of the five mentors responded that the experience was very positive. One student wrote: *As I was helping my students, I realized that I was actually learning more about the material.* Another student put it this way: *Because I was being asked to be more responsible, I did not want to let you or my group down, so I worked harder.* A third student wrote: *I realized during the class that I was being useful to other people, and that made me proud of myself.* Finally, a student wrote: *At first I thought this was going to be more work (and it was), but then I realized my colleagues wanted my help, and when I saw them learn, it made me proud of them.*

When asked how their colleagues used the mentors, the mentors responded that each of them received phone calls, emails, and online questions. During the class times, students asked for feedback from their mentors. As one student wrote: *During the course, every student used me to give them feedback or help, online and in class.*

When asked how the mentor process could be improved each mentor mentioned the idea of more time to learn about their colleagues and to give them more feedback. One mentor wrote: *I would have loved more time to get to know my colleagues, so I could give them more accurate feedback.* Another mentor said: *I think it would be better to have more time to understand how each student works. Then I could give better feedback.* The data from the mentors was very encouraging. We did not know how well this would work in an online environment. The results show that the use of peer mentors has a good deal of potential in both face-to-face and the online environments.

Professor Reflections: At the beginning of this process, the professor wrote in her notes, *I am not sure how this is going to work, because the students are afraid this will cause more work for them.* As the class progressed the professor wrote in her notes: *I am so excited about how the students are so engaged in their work. In their groups today they were working so hard and having so much fun, they did not want to stop.* After a class, the professor wrote: *When class ended today, the students were not leaving. They were talking in their groups and asking their mentors questions. I had to remind them that class was over.* In reflecting about the semester, the professor said, *The students were so much more engaged this term. They came to class more prepared, and they were enthusiastic about their learning. That encouraged to be even more creative for them. They made me become a better teacher.* In her final reflection, the professor said: *I am encouraged that my students are finding class to be so worthwhile. Attendance has risen and so has the quality of their work. I know I have to work more on the mentoring piece of this process, but the results are very exciting. Next year I will get even better at this student-centered teaching and learning process.*

Grades: We reviewed the grades for the same class prior to the implementation of student-centered teaching techniques and this class. Our university employs a 10-point grading scale. The previous class had a mean grade of 7.74. The class that participated in this study earned a mean grade average of 8.56. We applied a two-tailed paired t test to the two mean scores. The result was a $p = 0.024$, which is a statistically significant difference. We also applied a Cohen's d to determine the effect size of the differences in the mean grade scores. The Cohen's d score was 0.454. According to Hattie (2012) an effect size larger than 0.40 zero is an important effect size, indicating the differences are observable in the classroom. This score is in line with the professor's reflections on her observations of the class. She had indicated that students were more prepared for and more engaged in classes. The students also indicated they felt more prepared for their future careers as teachers because of their experiences in class and online.

7. Conclusion

Indications from the Student-Centred Teacher Survey, from the open-ended questions for participants, from the open ended questions for the mentors (and their one Likert scale statement), and from the observations of their professor all point to increased involvement, more effort, more ownership, and more learning on the part of the students. This triangulation of data all pointing to similar results led us to conclude that the student-centered techniques employed during this study led to significant gains for the student participants.

Although this is a small study, we are excited to add to the body of work we have developed since 2013 (Fitzgerald & Laurian, 2013; Laurian-Fitzgerald, Popa, & Fitzgerald, 2015; Laurian-Fitzgerald & Fitzgerald, 2016; Popa, Bochis, Laurian-Fitzgerald, & Fitzgerald, 2018). We are encouraged to develop more understanding about student-centered learning, and the opportunities for our future students. As we contemplate our results and add them to ideas of other related concepts like: the brain's natural learning potentials (Caine & Caine, 2011; Sousa, 2017), neural diversity and strength-based teaching (Armstrong, 2012); Grit (Duckworth, 2016; Growth Mindset (Dweck, 2012); Cooperative Learning (Johnson & Johnson, 2013), Project-Based Learning (Kraus and Boss, 2013), Universal Design for Learning (Novak, 2016), Experiential Learning (Dewey, 1910; Kolb, 1984), Positive School Climate (Preble & Gordon, 2012), and teachers taking back the education of our students (Robinson, 2010 & 2017), we see the potential for a great future for education around the world. We can envision a day when education is about and for our young students, and not for adult egos and political points. We can see a time when students are allowed and encouraged to take over their educations with the help of highly trained and motivated teachers.

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