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When Tutors Self-Tutor:
What College Students Who Want to be Teachers Learn about Themselves, Technology, and Teaching when Pursuing Self-Chosen Learning Goals

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Tutoring has been called "the act of saying to somebody else, 'Let me help you learn' " (Chin, Rabow, & Estrada, 2011, p. 2). Teacher preparation programs regularly encourage college students becoming elementary or secondary school teachers to tutor younger learners as an early school-based field experience. Tutors, acting as teachers, must learn how to provide ideas and information to aid and encourage students to accomplish learning goals. Tutors must also assess the effectiveness of their decisions about when and how to implement different instructional strategies to respond to students' needs.

Studies have found that tutoring is a compelling learning experience for future teachers, one that impacts college students' views of themselves as learners and future educators (Wu, 2016; Bennett, 2013). One review of 51 studies found evidence of tutoring experiences strengthening preservice teachers' pedagogical and instructional abilities (Hoffman, et. al, 2019). Researchers have connected tutoring to the goals of personalized learning where instruction is aligned to meet the needs and interests of individual learners (Pane, et. al., 2017).

What has not been examined is this: what might be outcomes of college students themselves being tutored while acting as tutors assisting and mentoring younger learners? How might the combination of being both a tutor and a tutee affect college students' thinking about themselves as learners and future teachers? How would college students go about self tutoring in face-to-face and remote learning settings?

To explore these questions, we introduced a self tutoring assignment into our undergraduate education course at the University of Massachusetts Amherst, "Tutoring in Schools." In this course, part of the Education Minor in the College of Education, college students are required to do 40 to 45 hours of academic tutoring with culturally and linguistically diverse learners in local schools. Tutoring sites range from preschools to high schools and tutoring happens both in regular school classrooms and learning centers as well as in after-school and homework support programs. Between 100 and 125 college students enroll in "Tutoring in Schools" every year. The majority are planning to become teachers; others want the opportunity to work with younger learners. Students from 33 different undergraduate majors (the University has a total of 90) have taken the course in the past three years.

Beginning with the Fall 2018 semester, we asked undergraduates in the "Tutoring in Schools" course to devote 5 to 10 hours of the required 45 field experience hours to a self-chosen tutoring activity. We defined self tutoring as setting and working toward a personal or professional learning goal that was not a requirement or assignment for one of their teacher preparation courses. Two hundred self-tutoring projects were completed in the past four semesters, including the Spring 2020 term when 50 self-tutoring projects were done largely through remote learning due to the COVID-19 pandemic.

In creating the self-tutoring assignment, our intention was to reverse the teaching and learning experience for future teachers. As college students tutored younger learners, they

would be tutored also as they pursued a self-chosen learning goal. We imagined that such self tutoring experiences would reveal the importance of active engagement and student-centered teaching in any learning endeavor. What we found was that when tutors are tutored, they gained unexpected and in many cases profound insights about themselves as learners and about the kind of teachers they hope to become.

Methods

All 200 tutors completed an end-of-the-semester reflection paper documenting their self-tutoring project and the hours they spent on it. In those papers, we asked college students to specifically discuss three topics: 1) What instructional modes did you use and how did they support your learning?; 2) Could you have learned without making mistakes?; 3) How did self tutoring impact your thinking about what you plan to do pedagogically and instructionally in the future as a teacher in a school classroom?

Using a qualitative case study research design, we read each paper to identify each student's self-tutoring project and the types of in-person and online resources each student used to pursue their goal. Next, we looked for recurring themes in what the students wrote about their self-tutoring. Our goal, as summarized by researchers Sharran B. Merriam and Elizabeth Tisdell noted was "understanding the phenomenon of interest from the participants' perspective, not the researcher's" (2016, p. 16). In reporting the themes, we have sought to be "richly descriptive" by quoting directly from student writing that revealed their thinking about their self tutoring experiences (Merriam & Tisdell, 2016, p.17).

Findings

Findings are reported in three categories: A) What college students chose to learn from their self tutoring projects; B) How college students were tutored in face-to-face and remote

settings; and C) How college students described the impact of their self-tutoring experiences on themselves and their thinking about becoming teachers.

A. What College Students Chose to Learn

The college students in the Tutoring in Schools course were able to choose whatever they wanted for their self-tutoring, an option that at first surprised and in some cases initially stymied many of them. One student wrote: "*Our self tutoring project was a novel idea to me, as I have never had the opportunity to completely choose a topic to research for one of my classes before."* Others found the assignment intriguing, as one tutor noted, "*I thought that would be interesting to try to do something that I have had absolutely no experience with so that I would really have to learn the whole process*." Another remarked, "*When I heard that I was able to learn whatever I wanted to learn, I was extremely excited*."

Four broad categories of self-chosen learning projects emerged: Academic and Courses; Physical and Mental Health; Personal Talents and Interests; and Teaching and Communication Strategies (Table 1).

Table 1: Categories of Self-Tutoring Projects: Fall 2018 to Spring 2020

Academic and Courses	**Physical and Mental Health**	**Talents and Interests**	**Teaching and Communication Strategies**
Forming Study Groups	Pilates	New Languages (Spanish, Russian, American Sign)	Reading *How to Talk to Kids* book
Attending Office Hours	Dancing	Coding	Leading classes for students in residence halls
Proofreading and editing writing assignments	Weight Training	Hair Braiding	Teaching math concepts to 4th graders
Math test preparation	Running	Podcasting	History learning
Book Editing	Juggling	CPR and Lifeguard training	Geography learning
	Ice Skating	Acrylic Painting	
	Guided Meditation		

Calculus Review Improve Physics Exam score Montessori Learning and Educational Practices in Montessori Schools	Yoga Jiu-Jitsu Golf Rules and Skills Overcoming social anxiety Skateboarding Snowboarding Spin Fitness Competitive Running	Piano Tie-Dying Knitting Embroidery Truck Repair Calligraphy and Lettering Painting String Art Card Tricks Playing the Ukulele Playing the Trumpet Pastry Baking Crochet Yo-Yo Tricks Cooking Favorite Foods	Preparing for Leadership roles in student organizations Judge for Massachusetts History Day Projects Hiking Leadership Becoming an Effective Canvasser

Academic and Course Projects focused on students deciding to improve performance in one of their college courses or an area of academic interest. For example, one student formed a peer study group for his statistics class; several students began going to regularly scheduled office hours for assistance with research methods, writing skills, and math topics including differential equations and econometrics. Others made commitments to raise their grades in science classes. Two students decided to work on proofreading and book editing.

One early childhood education major chose to learn more about the work and philosophy of Dr. Maria Montessori.

Physical and Mental Health Projects were organized around activities that would improve overall health and wellness. Many of the projects in the category involved sports and physical skills, including pilates, choreographed dance, martial arts, running, weight training, juggling, golf, and ice skating. A second group of projects addressed mental health and relaxation through projects including guided meditation, yoga and overcoming social anxiety.

Talents and Interests Projects involved pursuing new skills outside of college academic courses. Several students chose to learn a new language (Spanish, French, Korean and American Sign Language). Other individuals chose hair braiding, knitting, tie-dying, podcasting, and acrylic painting. Baking and cooking were popular choices as were learning to play the piano, the guitar, and other musical instruments. One student chose CPR and lifeguard training and certification; another truck repair so he could keep his 1994 pickup on the road.

Teaching and Communication Strategies Projects focused on students' wanting to improve their communication and leadership skills in teaching and teaching-related situations. Three students read the interpersonal communication book, *How to Talk to Kids So Kids Will Listen & Listen to Kids So Kids Will Talk* (Faber & Mazlish, 2012). One student chose to improve skills as a leader of discussion groups between students and resident assistants in a college dorm. Another decided to improve his skills as a leader of outdoor hikes. Other students focused on teaching math to 4th graders at a local elementary school, preparing for leadership roles in a registered student organization, learning about history through podcasting, learning geography, and serving as a judge for a regional Massachusetts High School History Day competition.

B. How College Students Were Tutored

In general, college students sought information and skills from three broad sources of self-tutoring assistance and support (see Table 2).

Table 2: Self-Tutoring Sources: Spring & Fall 2019 & 2020

Tutoring from Other Individuals and Groups	***Tutoring with Technology***	***Tutoring through Individual Reading and Reflection***
Selected Examples: ● Student Study Groups ● Student-Run Clubs ● Attending Faculty Office Hours ● Personal enrichment and fitness classes ● Supportive Friends and Training Partners	Selected Examples: ● YouTube or Khan Academy videos ● Smartphone and computer apps ● Online Learning Games ● Interactive Websites ● Following Experts on Instagram ● Zoom meetings with family and friends	Selected Examples: ● Reading books and other written materials about an educational topic ● Reading *How to Talk to Kids So Kids Will Listen & Listen to Kids So Kids Will Talk*

Looking at the categories in Table 2, we imagined that students would choose one of the three primary tutoring sources and use it exclusively as they pursued their self-chosen goals. And we assumed that technology/remote learning would be the primary source during the Spring 2020 term when the University was closed to face-to-face classes and students were quarantined at home after the state's governor closed businesses and schools. As we read students' reflection papers we found that what we imagined and assumed were overwhelmingly not the case. Instead most students utilized a blend of the frameworks, creating their own combinations of personal, group and technology-based/remote learning experiences and utilized some of these while living at home.

Tutoring from Other Individuals or Groups. Most students chose to involve other people, from personal friends to mentors and experts in their learning. Students receiving tutoring from other people included academic assistance from professors during office hours along with support from peers in voluntary study groups, instructors in personal enrichment classes, and personal friends who shared an interest in their self-tutoring goals.

Interestingly, tutors regularly cited friends and family members as key learning resources. Expressing long-held anxieties of entering and being watched in male-dominated weight rooms, one tutor recalled *"having my friend accompany, help and support me while doing weight training was so crucial."* In a few instances, self tutoring was a personal pursuit, undertaken by determined individuals who set goals and motivated themselves to pursue it. For example, one student decided to teach herself how to run competitively. She said she learned "*how to run such a distance without injuring myself, educated myself on the best clothing and shoes to purchase, made a training plan and stuck to it, and even completed my first 5k over Thanksgiving break*." Another student decided to learn American Sign Language because "*many people in my family are hard of hearing, so I had an interest in learning the language which I never pursued*."

Tutoring with Technology. Perhaps not surprisingly, most college students began their self tutoring by accessing online technology resources. They Googled information about their topic, watched instructional videos on YouTube, Instagram or Khan Academy, downloaded smartphone apps, and shared their experiences on social media. From those digital beginnings they integrated additional sources of information and support. For example, English-speaking students used digital technologies for learning new languages (Spanish, French, Italian, American Sign Language).

Students engaging in personal enrichment activities (pilitates, mediation) and students seeking to improve their physical and mental health made extensive use of online information. To start learning pilates, a junior watched YouTube videos and then created playlists of different routines. She noted *"the creation of playlists allowed me to feel a sense of agency and tailor the workout with consideration to both what I needed to improve on and what I enjoyed doing."* All kinds of technologies were used to support self tutoring. Two friends using resistance machines at the gym said "*As our skills balanced out*, *we began to experiment and learn side by side*," turning to YouTube and Instagram videos to learn new workout routines. To learn more, they "*followed Instagram pages, subscribed to blogs, and searched the Internet to read about the myths and facts surrounding weight training*.'

Tutoring through Individual Reading and Reflection. Some students organized their self tutoring around reading a self-help or education themed-book about a topic and then making plans to apply what they learned in their daily lives. For tutors who planned to become teachers, we suggested they read and write a learning reflection paper about the classic communication strategies book *How to Talk So Kids Will Listen & Listen So Kids Will Talk* (Faber & Mazlish, 2012). A small number of tutors self-organized and directed their learning.

C. How Tutors Described What They Learned From Self Tutoring

In their reflection papers, college students described three main areas of learning from their self tutoring projects: 1) Different ways of learning; 2) Learning from mistakes; and 3) Considering Future Roles as a Teacher:

1) Different Ways of Learning

Tutors linked their self tutoring to different modes of learning, commenting directly on how verbal-linguistic, visual-spatial, logical-mathematical, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist learning contributed to their self tutoring experiences.

A tutor who decided to teach herself how to run competitively said "I *used every multiple mode in the hours I spent self-tutoring*." She cited the importance of the interpersonal connections she established by consulting with her parents and other runners; the logical-mathematical thinking she used as she calculated the distance of her runs; and the importance of running outside to enjoy herself naturalistically. Tutor after tutor wrote about the importance of having multimodal resources to support their learning. Tutors also cited the importance of combining technology resources such as podcasts, videos, simulations, games with interactive, in-person practice sessions, office hours, and study groups. They valued learning alone and learning together with others.

2) Learning from Mistakes

College students acknowledged that making mistakes was a constant part of their self tutoring experience, and for almost all this was not an easy reality to accept. Students wrote about how they had come to college feeling they were always good at whatever they chose to do academically. As one senior said, "*Generally, I do not like making mistakes because I want things to be perfect.*" But in self tutoring, many college students found themselves entering new and unfamiliar areas where they had not previously experienced success as learners. It was unnerving and somewhat daunting for them to be a novice at a skill or talent. As one tutor stated, "*my lack of engagement with athletics and physical activity is because I do not want people watching me make mistakes*." A student learning martial arts noted "*at first it is disencouraging to make mistakes in anything.*" But his Jiu-Jitsu class created an environment where "*all participants can feel comfortable making mistakes because it's one of the ways that people will grow and learn*." One senior learning a new language remarked, *"I learned how important it is to be patient. I learned that there will be ideas and concepts that take longer to learn than others*." Still, she went on to say, "*If I set my mind to it, I can achieve success."*

3) Future Roles as a Teacher

College students planning to become teachers had numerous observations about how self tutoring impacted thinking about their future practice as teachers. One senior planning to earn a teacher license in graduate school commented, *"Teaching myself a new skill was not something I was used to, however it really opened my eyes and changed my perceptions of what I will do as a teacher."* A second tutor remarked *"being in the seat of the one being tutored, and reflecting upon it opened my eyes and changed my perception of tutoring*."

Tutors envisioned recreating their learning experiences during self tutoring in how they planned to organize their future classrooms. Acknowledging that she could not have learned to French braid hair without online resources and a friend who was a learning partner, a second-year student concluded that *"partner and group work is so important in the classroom because sometimes peers are better able to explain material in a way that other students would understand."*

A student who was learning French with Duolingo and French Word-Of-The-Day apps on her smartphone affirmed that "*differentiating learning in interesting and unique ways keeps you engaged and excited to learn. This is something I am interested in bringing to my classroom when I eventually become a teacher. I now have a new way of thinking about teaching, in which I do not just think about how best to lecture the material but instead what the students can do to have more hands-on learning instead of just listening and writing, prone to zoning out and getting distracted."*

An admittedly shy student who began taking a pilates class said "*the most surprising aspect of this experience was actually enjoying the group pilates classes and the sense of camaraderie that is fostered there. This experience informed what I want to do as a teacher helping learners because I realized how a sense of camaraderie was integral for students to*

grow. If a student is too afraid of the judgement of their peers, they will be too afraid to ask their questions and to take themselves outside of their comfort zone. As an aspiring educator, it will be my job to create a safe and open learning environment for students, similar to my experience during my free trial of pilates classes.'

Tutors found ways of connecting self tutoring experiences to specific academic curriculum topics. A future math teacher said, "*One way in which [hair] braiding can be used with mathematics is by relating it to patterns. Patterns are an important concept in mathematics, and children should be able to recognize and follow patterns early on in their education. Each specific braid has its own pattern that it follows, and by explaining and demonstrating this to students will give them a real life example of what a pattern is."*

Tutors repeatedly mentioned the importance of having more than one approach when teaching students. One tutor who set out to learn to juggle noted how "*sitting back and being taught reminded me of what it is like to be in that position of not knowing how to do something.*" She concluded *"that my future students will sometimes have tough times with concepts*" and it is fine if someone needs more time and perhaps a different approach. Another student stated, "*Math can be tedious if I make it tedious as an instructor*."

Making learning enjoyable and engaging were future goals for tutors. A college student who self tutored in geography recalled how important it is to "*enjoy something in order to learn it*." As a teacher, she intends to "*make sure that I am helping students approach what they are learning in a way that entertains them, interests them deeply and makes them want to learn more*." Another tutor cited the importance of promoting growth mindsets among students: "*the initial struggle of facing my own discomfort made me learn the importance of feeling that discomfort in the first place, and the importance of being able to overcome it. I will encourage my students to dive into that discomfort, seeing it as an opportunity for growth and for learning*."

Tutors noted that even though different technologies are important tools, conversations between teachers and students are also essential to successful learning. A tutor who chose to improve his writing skills stated he planned to tell future students that "*tools could help them out with their writing like using the grammar checker on Microsoft Word, but I would also tell them to meet up with me and we can read through the paper together out loud*." Another stated, "*Be approachable, open-minded, patient and understanding of my students*."

Conclusion

In this paper we have described the self tutoring experiences of 200 college undergraduate students who spent a semester learning a voluntarily self-chosen new skill or talent as part of a "Tutoring in Schools" course at the University of Massachusetts Amherst. Most of the undergraduates in the course were planning to become teachers or enter careers in human services or the helping professions. In addition to their self-tutoring, undergraduates also served as in-person and online tutors for culturally and linguistically diverse students in local elementary, middle and high schools or after-school programs. As a result, undergraduates experienced both sides of the teaching and learning relationship—they were tutoring younger students while they themselves were being tutored in their own learning.

From reflection papers written by students in the Tutoring in Schools class, we draw the following conclusions about what happens when tutors are tutored and what those experiences mean for them as future teachers and for us as teacher educators.

First, college students in our Tutoring in Schools course embraced the idea of pursuing personally-chosen new learning through self-tutoring activities. Whether it was practicing a new language, learning a new skill, attending an enrichment class, forming a study group, or building new habits through reading and personal reflection, college students told us they welcomed and

benefited from the experience. Even though these college students were doing self tutoring as a requirement for a class, they enjoyed the assignment in part because they had the opportunity to choose activities they intended to do.

Second, large numbers of the college students turned first to technology for self tutoring resources and materials. Language learners turned to apps; those learning new skills used YouTube videos; everyone used Google or other search engines to locate information and create self-learning plans. At one level, this is hardly surprising. Today's college students have grown up in a world dominated by digital and social media. At another level it suggests the importance of K-12 teachers knowing how to successfully integrate technology into classroom learning activities. "The New Digital Learning Playbook" report from Project Tomorrow (2014) distinguishes between **teacher-facilitated technology use** for schoolwork and **student-initiated technology use** for individual learning beyond what is assigned at school. At school, students tend to use digital devices to access information from teacher or educational websites, take online tests, and watch teacher-created videos related to class content. But students show greater engagement in learning when they can choose what they want to learn and how they want to use technology to help them learn.

Third, even though they turned to technology first, college students stressed how they benefited from multiple modes of learning, including conversations and interactions with other people - friends, family members, instructors and others. Other people provided them with resources that technology alone could not. Friends motivated tutors to keep going when they got frustrated, set goals that they could achieve together, and explained difficult concepts in new ways that promoted greater understanding. Whether in face-to-face or remote interactions, connecting with other people was cited over and over again as a key element for successful learning.

Finally, self-chosen tutoring produced reflective thinking by the college students about what it means to be a teacher and how they intend to go about organizing learning for students when they enter the classroom as a future teacher. Repeatedly, college tutors mentioned the need to adopt a positive mindset and a belief in oneself as a learner and how they intended to do that for future students. They stressed how important patience and persistence were for their learning and vowed to act that way toward students when they were the teacher in the classroom. They recognized that making mistakes is an essential and valuable part of the learning process rather than something to avoid or regret and they affirmed that they will encourage students to make attempts and self-correct when those efforts do not achieve the desired result.

Placing future teachers in a dual role as a tutor for younger learners while simultaneously pursuing a self-chosen learning goal has important implications for teacher educators and the design of teacher education courses and field experiences. It is very valuable for future teachers to, as one tutor stated, "*put oneself into the mind of the student in order to see the best way of teaching the material*." Thinking about what they needed and wanted in order to achieve their learning goal propelled college tutors to consider what students need in order to learn fully and confidently in schools. While it may not be possible in every teacher preparation course, giving future teachers opportunities to view and understand learning from "the other side of the desk" may be a vital professional learning experience. As the college students in the TEAMS Tutoring course discovered when they were tutored, learning is a complex interactional process that requires connection and collaboration to achieve. Being tutored by being placed in the role of wanting to learn something new let college students consider the importance of understanding what K-12 students need and want to be able to succeed as learners.

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