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STUDENT OWNERSHIP OF LEARNING: A STUDENT'S EXPERIENCE [ABSTRACT]

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ABSTRACT

Aim/Purpose	This study aims to document the results of Student Ownership of Learning through the development of a software application to support dementia patients. The research strives to create an agile career-like experience connected to software development courses to overall improve the learning outcome for students.
Background	Most online classes are limited to lectures, homework, and tests. However, students struggle to evolve with passive instruction as well as no hands-on experience. In addition to that the students do not gain experience directed toward their professions and are not familiar with the requirements during a software development process. The researchers of this study believe that Student Ownership of Learning (SOL) and Scrum can be the basis of a hands-on learning experience where the student is able to take an active approach to their own learning. The study identified the increase in dementia patients and the lack of interactive software applications in health care as an area where research and development were needed. The software application was created to address dementia patients' needs for meaningful interaction and improvement of memory. The student is able to take leadership of their own learning while working on developing their own project while having guidance from the instructor.
Methodology	In this research, the student and professor worked together as a team to experience Student Ownership of Learning that incorporated Scrum-like practices. The student was able to seek guidance from the professor throughout the pro-

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	cess and was able to receive feedback in weekly meetings. The student documented their weekly finding and set goals for each week. This helped the student to follow Scrum-like practices where a complex project can be split into multiple smaller units and tackled individually. The Scrum sprint helped the student to set goals for each development cycle and to prioritize certain tasks. The student experiences how to successfully manage time to complete a complex project on a defined end date. Each iteration allowed the student to develop further by doing research, speaking to experts, and having weekly instructor-student meetings. The Scrum process generally allows constant review, and the student is able to access the documentation from the earlier iterations.
Contribution	This study showcases the student's successful learning outcomes connected to Student Ownership of Learning as well as Scrum by providing documentation of the processes, concerns, and successes.
Findings	This study connected student learning to a professional experience that is closely tied to Student Ownership of Learning and Scrum. The student identified the importance of improving the situation of dementia patients through software development. Generally, the student noted that by working on a chosen topic of interest their motivation and programming skillset increased at a greater rate than in a normal classroom setting.
Recommendations for Practitioners	The researchers of this study recommend practitioners consider providing an experience of Student Ownership of Learning connected to Scum. Faculty members in technical fields are welcome to share the findings presented in this research as they experience a student's perspective throughout this process.
Recommendations for Researchers	Researchers are invited to experience how Student Ownership of Learning and Scrum practices might change learning outcomes in technical courses. Researchers could experience increasing learner independence and motivation to further develop students' programming skill sets.
Impact on Society	This study showcases how Student Ownership of Learning and Scrum practices can deliver a new form of higher education with hands-on involvement with more successful outcomes. In addition, this study wants to raise awareness for dementia patients and the troubles they are facing by developing an interactive dementia-focused software application.
Future Research	Future research could combine Student Ownership of Learning and Scrum methods in higher education settings to provide a more professional experience for students. The study of dementia-related software applications in health care can be expanded and further explored.
Keywords	student ownership of learning, dementia, software development, software engineering, programming, Scrum, professional experiences, learning outcomes

AUTHORS

Madeleine Schneider is a junior from Germany at the University of Minnesota, Crookston. She is part of the Honors program and is working towards finishing her degrees in Software Engineering as well as Information Technology Management. Her previous works focused on developing a system to keep university records and setting up an escape room game for elementary students together with a team of other students. Her current research showcases meaningful software development for dementia patients while exploring Student Ownership of Learning combined with Scrum practices.

Dr. Christine Bakke is an associate professor of cybersecurity at Grand Canyon University, Phoenix, Arizona and a Software Engineering and IT lecturer for the University of Minnesota, Crookston. She earned her IT PhD from Capella, where she focused on robotics and programming instruction. She has higher education experience in IT, Computer Science, Software Engineering, and Cybersecurity; and 18 years of IT career experience primarily focused on networks, cybersecurity, database, and programming. She has a passion for active research that combines academic and professional best practices into meaningful real-world experiences in educational settings; of particular interest is the development of capstone-like experiences in sophomore, junior, and senior level courses. She currently advises student software and IoT projects including speech-assisting software for mute adults, a dementia-assistive game, technology-related ergonomics, and development of sport-IoT + software.