

REQUEST TO CONDUCT RESEARCH 2021-2022

We are requesting to conduct research at your educational institution. To assist you in evaluating our project, please review the information provided herein. If you have questions that are not answered by this material, please contact the Principal Investigator. We look forward to working with you.

Principal Investigator: Anton Tolman, Ph.D., Professor

Institution: Utah Valley University, Orem, UT

Department: Behavioral Science

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Partnering/Consulting agency:

Exploring the Core, ExploringtheCore.com, Greg Mullen, contact@exploringthecore.com (310) 254-0515

Project Title: *Validation of Metacognitive Instruments in High School and Community College Students and Instructors*

IRB Approvals: UVU Institutional Review Board, Cyrill Slezak, Ph.D., Chair, January 11, 2021

This project has also been approved for research by the following institutions:

El Camino Community College, Torrance, CA

Porterville College, Porterville, CA

Salt Lake Community College, Salt Lake City, UT

Snow College, Ephraim, UT

Note: As per Utah Valley University IRB policy, the Principal Investigators, Mr. Mullen, and any student research assistants are all required to complete IRB training prior to participating in this research.

Type of Research: Survey/Questionnaire

Anonymous?

Anonymous

Not anonymous

Clarification: We need personal information to align Survey 1 and Survey 2; each subject will be assigned a ID number. Once the data is aligned and feedback has been provided to participants regarding their personal results and incentives delivered, identifying information will be deleted, essentially making the data anonymous.

Type of Survey/Test? The surveys consist of two integrated instruments plus common demographic questions and will be administered online after participants have given online consent (via Adobe Sign). Participants will then be sent a link to complete the survey.

Will the data be publicly presented?

Yes; anonymized data will be presented as a possible poster or conference presentation and may be included in a submitted manuscript for peer review and potential publication. Neither your institution, or individual participants will be identified in any of these public presentations. In addition, if your institution would like an overall summary of the results, we are happy to provide a de-identified summary.

Time Frame of Research

Desired start date: We will begin reaching out to CC Faculty and High School teachers in the summer of 2021 with an invitation to participate in the study and details of how to review the Informed Consent document and sign it electronically. We anticipate sending out a reminder within two to three weeks of when school begins in Fall, 2021. Data collection for Survey 1 should begin within the first two weeks of the Fall semester.

Anticipated end date: 12/31/2021

Total number of sites to be investigated: Our goal is to involve at least two California community colleges and three Utah community colleges. We hope to also involve the five high schools with the highest enrollments in their local community college. Ideally, we will also be able to recruit a minimum of 10 high school instructors in each school and their students. If a school or district has less than 10 teachers willing to participate, they are still eligible to be in the study.

Purpose of Research:

The promotion of metacognitive skills in students, particularly with regard to their awareness of, evaluation of, and use of effective learning strategies is a critical part of learning and developing an identity as an educated person. These skills are also central to the effectiveness of High Impact Practices in education (HIPs) and thus, it is reasonable to argue that they are relevant to student academic performance as well as retention and persistence to graduation in both secondary education and higher education. Several years ago, Dr. Tolman (PI) developed a set of metacognitive instruments for use with students as well as a separate set for use with college instructors (relevant for self-reflection and use in faculty development programs). Some of these instruments are founded in the Transtheoretical Model of Change (TTM), a well-established model of how human beings adopt new behaviors based on the concept of “readiness to change”. This represents an innovative approach to enhancing student learning, especially in high schools. The other instruments are behavioral and estimate the frequency of use of effective learning or teaching strategies, respectively. In several studies, these instruments have been tested and validated in four-year college populations. In preparation for an anticipated federal grant submission next year related to the use of these scales as part of evaluating transition to community college, we would like to evaluate the instrument reliabilities and validity in the relevant populations of students and faculty. We anticipate that the instruments will be reliable and valid and will use the data to improve the surveys, if necessary.

Informed consent documents require that college students verify that they are at least 18 years old; consent for high school student participation will be required from a parent or guardian. This research project does not involve vulnerable participant populations.

Scope of Research:

For Community Colleges, we plan to involve at least 10 instructors at each of the five listed community colleges; in addition, each of the instructors will involve at least one of their classes to complete the student surveys, for a likely sample of 300-400 students per college.

For high schools, we plan to involve at least 10 instructors at each high school (25 high schools in total, for a total sample size of 250 high school teachers). In addition, each teacher will involve at least one of their classes for the students to take the surveys (estimate of 300 students per high school, 7500 total high school students across the two states).

Methodology & Sampling:

We will provide the link to the TTM scale and the Teaching Strategies Self-Assessment for all teachers and faculty. The teachers/faculty will administer the student versions of the TTM scale and the Learning Strategies Self-Assessment (LSSA) scale; the surveys will begin early in the semester; We will also collect basic demographic information to evaluate any potential impact needing to be addressed in the subsequent federal grant study. We will repeat these administrations near the end of the semester. This will enable us to evaluate test-retest reliabilities and to establish a baseline for reported change in readiness stages and/or use of strategies for the more comprehensive federal grant.

Participating instructors will be asked to assign completion of the survey instruments as a regular course assignment with an alternative assignment for those students (or their parents) who may decline to participate. Risks involved in the study are considered minimal since they are focused primarily on student attitudes about learning and reported use of specific learning strategies relevant to student academic success. The same is true for instructors. We will provide each student

with a summary of their scores and a way to interpret the meaning of their scores at the end of the semester; we will provide participating teachers and faculty an overall summary of their student scores (percentages per category, mean scores, etc.), and their own scores with an interpretive summary as well, but no individual data will be provided to high school teachers or college faculty other than who completed the assignment and who did not. Likewise, any individual data from students or instructors will not be provided to the relevant institutions involved.

Students and instructors will complete the surveys online using Qualtrics and data will be stored in the UVU system with password access available only to Dr. Tolman and to student assistants as needed for analysis. Along with the coded demographic information, we will request participants to include information we can use to create a unique identifier. This will be necessary in order to ensure accurate alignment of survey data from Survey 1 and Survey 2. Once data collection has finished, these identifiers will be deleted from the database so that the database contains no identifying personal information.

Participant Recruitment:

We will request that participating schools and colleges provide us with the contact emails from their instructor directory. For community colleges, we will reach out to those teaching courses that typically satisfy “general education” requirements (usually in English, Math, and the physical and social sciences) and/or that are required foundational courses across the degree programs. For high schools, potential participants will include teachers of junior and senior level courses since this will align with the planned participant pool for the future federal grant. Mr. Mullen will follow-up with those faculty who choose to respond to give details regarding the study and provide the link to the informed consent document. All participating instructors who complete both surveys and involve their students in both surveys will be entered into a random drawing where 10% of participating instructors will receive a \$100 gift certificate; the other participating instructors will receive a \$20 gift certificate (pending funding).

Student participants will already be enrolled in the courses of the volunteering instructors; as noted, they will be given the chance to complete the surveys as regular course assignments or to complete a comparable alternative assignment which will count for class credit. Their parents will be provided with the informed consent document to complete.

All participants will receive summaries of their scores and the meaning of those scores.

Potential Risks and Benefits to Participants:

Potential benefits: For students: when people take a survey, they generally are interested in understanding the outcomes or the meaning of their results. All participating students will receive a summary of their scores on the TTM survey and the learning strategies questionnaire with a brief description of the meaning of their scores. Given that these instruments have shown previous relationships with assessments of deep approaches to learning, classroom engagement, retention, and academic performance, this summary and the reflective nature of the qualitative questions on the LSSA may help students evaluate how they are approaching their learning, give them some direct and relevant feedback, and create the opportunity for them to improve how they learn.

For faculty: there are several potential benefits to faculty. First, by participating in completing the survey, faculty gain the chance to enhance their own metacognition by thinking about their own readiness to adopt new teaching strategies and to evaluate which strategies they are using and why. The qualitative questions ask for reflection of what methods they are using as well as those they are not. Second, by the end of the study, they will gain added insights into whether or not they have changed in any way related to the TTM and their teaching metacognition and will gain some detail about the meaning of their survey scores. This can enable them to consider these issues as they prepare for next year’s classes. Third, all instructors will be provided with a summary of the data from their students who participated; armed with a better understanding of the TTM and their own teaching approaches, they will be able to gain a “bird’s eye view” of what learning strategies their students are using or not using which may inform them of how well their own approaches are working and give insight into improving their methods and curriculum for the next class. After having reviewed their own TTM stages and teaching strategies, they will also be able to evaluate how students viewed some of their approaches and consider how to better deal with resistance and seek out new opportunities to improve student learning.

Potential Risks: None of the questions on the surveys asks deeply personal questions; none of the questions ask students or instructors to reveal information of a sensitive nature such as drug use, sexual history, abuse, mental health issues, or medical concerns. All questions are related to attitudes regarding school, teaching, and teaching and learning strategies. Therefore, we appraise potential risks to participants to be fairly low. It is conceivable that some students, in evaluating

their own performance and use of learning strategies might realize that they are not using very many of these strategies and could feel some anxiety as a result. The survey instructions indicate that there are no right answers, and students will be notified that they can feel free to raise concerns with their teachers, Dr. Tolman as PI or even the UVU IRB; Dr. Tolman will personally respond directly to any such emails. The feedback summaries will also emphasize that change is an ongoing process and that moving backwards on the TTM stages, called “recycling” in the literature, is a very common pattern and a natural part of change, and will be presented to students and teachers in a positive, constructive context. If there is any indication of more significant anxiety or other concerns, Dr. Tolman will inform the relevant faculty member for possible referral to institutional or clinical support. Previous studies have not resulted in any serious or significant concerns such as these with higher education students or adults, but they will also be informed that they can contact Dr. Tolman directly or the UVU IRB if they have any concerns.

Other potential concerns, particularly among teachers and professors could potentially be related to colleagues finding out someone’s scores or concerns about potential impact on tenure or performance evaluations. As noted, once Time 2 data is correctly aligned, all identifying information will be removed from the database; no individual data from either students or instructors will be presented, included in any publications, or documents. The only exception could be use of qualitative comments as exemplars of attitudes or specific perspectives, but these comments would be de-identified and since data collection will be coming from multiple regions in two states, this does not appear to pose any significant risk.

Data Storage, Access, and Destruction Plans:

*** Data will be stored for a maximum of 5 years.**

This is an estimate, given that this is a pilot study for a three-year federal grant proposal. Thus, the data from the current study may be kept for a minimum of one year, potentially used as part of the data for a 3-year federal study, and then another year for wrapping up and preparation of presentations, publications, etc. This would put a schedule for data to be destroyed by December, 2026.

Only the PIs and student research assistants at UVU will have access to the raw data which will be protected through UVU’s regular policies and procedures.

Further Questions or Concerns:

If your institution has specific questions or concerns or would like to see sample copies of the instruments or consent forms, please contact Dr. Tolman at Anton.Tolman@uvu.edu

Thank you for your interest in our study!