Chicago Public Schools

## View xForm - Research Review Board (RRB) Submission

**New RRB Submission**

### Data Entry
### - Submitted 08/31/2024 8:38 AM ET by Rutter, Kevin

### Submission Type

| | |
|---|---|
| **RRB Number** | 2024-1980 |
| **Study Title** | K12 TEACHER INTENTION TO USE A MAKERSPACE: AN ANALYSIS USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY |
| **Event Type** | New Submission defined 08/31/2024 |
| **Schools Participating** | *No answer provided.* |

### SUBMISSSION TYPE INSTRUCTIONS AND OPTIONS

***"New Submission"*** *- if this is a brand new RRB proposal OR you need to make requested revisions to an RRB submission that is NOT yet approved.*

***"Entry of RRB project that was previously-approved outside of IRBManager"*** *- if you would like to enter a project into IRBManager that was reviewed and approved outside of IRBManager (i.e. before IRBManager was implemented at CPS). For this selection, there must be no changes in your study protocol from when your study was previously approved.*

***"Modification/Continuing Review of RRB Project Previously approved outside of IRBManager"*** *- if you would like submit a modification for a study that was* ***approved outside of IRBManager (i.e. before IRBManager was implemented at CPS).***

**Type of Submission**
New Submission

### Pertinent CPS Documentation

### Submitter

Phone: 312 203 8637

08/23/2024 • Rutter, Kevin • *Not* Internal

Rutter, Kevin

**Email:** KWRutter@cps.edu **Phone:**

**Overview of Pertinent CPS Documentation**

**The RRB is composed of members representing various Central Office academic departments as well as the Law Department. The RRB meets quarterly to evaluate new proposals to conduct research. The RRB calendar and deadlines for submissions can be found on the CPS Research Website here. Decisions resulting from the research review process will be communicated to the applicant of the request as well as appropriate CPS staff in accordance with the estimated timelines outlined in the respective RRB calendar.**
**External researchers may not begin any research activities or obtain data for research purposes without first following the procedures outlined in this policy and securing the necessary approvals.**

***We expect all researchers to be familiar with the guidelines and policies guiding research within the district. Please verify that you have read and acknowledged the following:***

**External Research Study and Data Policy**
✔ I have read and understood the External Research Study and Data Policy

**CPS RRB Guidelines**
✔ I have read and understood the CPS RRB Guidelines

**CPS Equity Framework**
✔ I have read and understood the CPS Equity Framework

**CPS Vision**
✔ I have read and understood the CPS Vision

**CPS Volunteer Policy**
✔ I have read and understood the CPS Volunteer Policy, including background check requirements

## Study Personnel Details

**Study Title**

K12 TEACHER INTENTION TO USE A MAKERSPACE: AN ANALYSIS USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY

## Does your organization participate in a Research Practice Partnership (RPP) with Chicago Public Schools?

No

## Primary Study Organization/University

Northern Illinois University

## Principal Investigator

Rutter, Kevin

| Expirations: | Background Check Level: |
|---|---|
| | |

**PI Organization**
Northern Illinois University

**If the form indicates "not found" when you add the Principal Investigator, please use the link below to add the contact to the IRBManager system.**
User had the option to start a different form here.

## Are there any other study contacts?

No

*If the person completing this form is not the Principal Investigator, it is suggested that the submitter be entered as a contact.*

## Is the Principal Investigator a Student?

Yes

**Degree**
Graduate - Doctoral

## University

Northern Illinois University

**College/Dept.**
Educational Technology, Research, and Assessment

**Advisor Name/Title**
Dr. Cindy York

**Advisor Email**
cindy.york@niu.edu

**Is the researcher a CPS Staff Member?**

Yes

**CPS Affiliation**

Teacher

*Are you a CPS employee? If so, please select from one of the following.*

## Funding and Intervention Information

**Is this project contracted by the CPS Board of Education?**

No

**Is a funding source associated with the proposed research?**

No

**Select the option that applies to your study**

My study will involve a selection of individual schools

**Please select all potential school sites involved with this study**

Carl Schurz High School

**Will this research require any in-person interaction or intervention activities?**

No

**Will this research require any virtual interaction or intervention activities (Google Meets, Zoom, etc.)?**

No

*Please note that Zoom is not approved for use with CPS Students. Any virtual activities will need to be conducted via Google Meets and safe@cps.edu must be invited to Google Meet. Please adjust virtual methods accordingly. For more information on permitted interactions with students and staff, please visit https://www.cps.edu/about/policies/acceptable-use-policy/external-volunteers/.*

**Please check all of the following that apply to your research protocol:**

Questionnaire

**Please outline your protocol for survey activities, describing when, where, duration, frequency, and with whom.**

The following is a day-by-day breakdown of the steps to be taken in informing participants of the study, how to take it and the time commitment involved:

WHEN: The target start date is December 3, 2024
Day 1: Introductory letter placed in school staff member mailboxes at the school. The letter notifies staff of the study, notes the time commitment to complete and that it is voluntary. A voucher for a coffee/snack at the school store is included.
Day 4: Email sent to teacher's school district email accounts; survey link is active, the consent form is the first item on the survey. Participants are reminded in the email that is is voluntary, confidential, and should take about 10 minutes.
Day 11: Follow-up email sent to teacher email accounts. Participants are reminded in the email that is is voluntary, confidential, and should take about 10 minutes.
Day 14: Mid-study letter was placed in the teacher mailboxes at the school with the paper survey option for those staff members who did not complete the online survey. The paper survey includes a consent form.
Day 18: Final email sent to teacher school district email accounts. Participants are reminded in the email that is is voluntary, confidential, and should take about 10 minutes.

WHERE: Online survey using CPS email. Optional paper survey using staff mail box.

DURATION: 10 minutes

FREQUENCY: 1 survey of 20 questions

Question online:
The first 6 six questions on the survey ask participants about their age, gender, experience level, department, primary role, and the grade level they work with.

The remaining survey items are about their experience with the school makerspace following the Venkatesh et. al. technology acceptance model, Unified Theory of Acceptance and Use of Technology or UTAUT. Constructs of this model include Performance Expectancy, Effort Expectancy, Social Influence, and Behavioral Intent.
The session ends when participants click the submit survey button in Qualtrics or turn in the paper survey, if they chose to do it on paper.

WHOM:
The target population for this study is K-12 school staff members with access to a school makerspace. Due to limitations in time, money, and material, this researcher will rely on a convenience sample of staff members at Carl Schurz High School.

All school staff in direct contact with students who influence classroom instruction can take the survey, i.e., teachers, administrators, instructional coaches, technology coordinators, counselors, program coordinators, mentors, and classroom aides.
Staff members who are not eligible include school security, nurses, social workers, psychologists, and custodians.

**Please describe how data will be captured and stored securely**
Survey data collected through the Northern Illinois University Qualtrics platform will be stored on an encrypted hard drive in a lock box. No IP address will be collected.

Participants who opt to take the paper survey will have their answers stored in a secure lock box.

**Please attach all study materials corresponding to interview procedures (i.e., consent forms, protocol, recruitment and incentive plans)**

| | |
|---|---|
| Consent Form - Paper Survey option | Consent Forms |
| Online Survey (Qualtrics) Consent page | Consent Forms |

**Detail the method of Survey Administration (e.g. paper, online, etc.)**
Survey will be administered primarily through the Northern Illinois University Qualtrics platform via staff CPS email accounts.

Participants may also opt for a paper survey distributed through staff mail boxes.

**Will this research require the use or access of existing CPS data?**

No

**Will this research require the use or access of existing non-CPS data?**

No

## Study Details

**Please select all of the following that will be participating in the study?**

Teachers
Other Staff

**Has this project been reviewed by an Institutional Review Board (IRB)?**

Yes, and it was approved

**IRB of Record Name**
NIU Division of Research and Innovation Partnerships

**IRB Protocol Number**
HS24-0374

**Please attach all of your IRB documentation here (include approval/exemptions letters, IRB study protocol, etc.).**

Northern Illinois University IRB Approval notice  IRB Protocol

**IRB of Record Primary Contact Email Address**
pwallace@niu.edu

**Please select your primary area of research from the following:**

Teachers

**Secondary Study Subject(s)**

STEM Education
Teachers
Teaching and Learning
Technology

## Study Overview

## Executive Summary or Abstract

*Please provide a high-level overview of your study, including a summary of the motivation, design, and implications of the project.*

This study seeks to analyze school staff intention to use a makerspace. Makerspaces in K-12 institutions are sites for creative production in art, science, and engineering where students blend digital and physical technologies to explore ideas, learn technical skills, and create new products (Sheridan et al. 2014).

The motivation to understand makerspaces stems from the promising early research on their ability to engage students in STEM subject areas. This study looks at a makerspace as a technological innovation to STEM instruction. The Universal Technology Acceptance and Use Theory by Venkatesh et al., 2003, provides the survey instrument from which staff intention to adopt a makerspace into instruction is analyzed. UTAUT has been widely used in educational settings to understand technology innovations in the classroom.

Implications of the project include a clear picture of school staff's intentions to use a makerspace to achieve learning objectives. This information can assist stakeholders in resource allocation for improvement in STEM subject learning.

## Research Questions and Hypothesis

*Please list all research questions and hypotheses associated with this project.*

### Research Questions

1. What is the relationship between the performance expectancy of faculty members and the behavioral intent to use a makerspace for K-12 classroom instruction?

2. What is the relationship between teachers' effort expectancy and behavioral intent to use a makerspace for K-12 classroom instruction?

3. What is the relationship between the social influence of faculty members and the behavioral intent to use a makerspace for K-12 classroom instruction?

4. To what extent do gender, age, and experience moderate the relationships between 1.) performance expectancy, effort expectancy, and social influence of faculty members and 2.) their behavioral intent to use a makerspace?

### Hypotheses

H01 Performance Expectancy does not affect faculty members' behavioral intent to use a makerspace for classroom instruction.

H11 Performance Expectancy has a positive effect on faculty members' behavioral intent to use a makerspace for classroom instruction.

H02 Effort Expectancy does not affect faculty members' behavioral intent to use a makerspace for classroom instruction.

H12 Effort Expectancy has a positive effect on faculty members' behavioral intent to use a makerspace for classroom instruction.

H03 Social Influence does not affect faculty members' behavioral intent to use a makerspace for classroom instruction.

H13 Social Influence has a positive effect on faculty members' behavioral intent to use a makerspace for classroom instruction.

H04 Gender, age, and experience does not affect the relationship between 1.) faculty members' behavioral intent to use a makerspace for classroom instruction and 2.) performance expectation, effort expectancy and social influence.

H14 Gender, age, and experience modulates the relationship between 1.) faculty members behavioral intent to use a makerspace for classroom instruction and 2.) performance expectation, effort expectancy, and social influence.

## Purpose and Literature Review

*Please provide an overview of the existing research and literature on this subject. What is the contextual history of this subject area and how does this research build upon the body of extant knowledge?*

This quantitative, correlational case study research (Fraenkel & Wallen, 2009) analyzes the intent to use a dedicated makerspace for faculty members of a high-poverty, urban high school in the Midwestern United States: Schurz High School. The school is equipped with a U.S. Department of Education-funded dedicated makerspace. It has student demographics representing groups the National Science Board (2021) identifies as underperforming in STEM subject areas: minority and low-income students. Early research on makerspaces as an innovation to classroom instruction suggests improved learning outcomes in STEM subject areas (Barnett, 2005; Kafai et al., 2014; Peppler & Glosson, 2013; Sheridan et al., 2014). It is essential to examine how teachers integrate technologies because, as Ertmer (2005) noted, "the decision regarding whether and how to use technology for instruction rests on the shoulders of classroom teachers" (p. 27).

Data from multiple government agencies, think tanks, and testing organizations showed U.S. students lagging their counterparts in STEM learning achievement, no significant improvement in test scores in STEM subjects in the past decade, a STEM learning gap for minority groups and women, and a lack of preparation and interest in pursuing STEM at the post-secondary level. As a result, this learning problem negatively affects a.) individuals because they are not able to obtain STEM jobs that pay more, have less unemployment, and have long-term growth prospects, b.) the national economy because STEM careers in the United States drive innovation and fend off global competition, c.) national security because the military is reliant on a STEM-skilled labor force to update defense technologies and handle complex systems. Possible pedagogical solutions to improve K-12 STEM learning outcomes included approaching STEM education from a constructivist perspective that requires active engagement from students, incorporating multiple disciplines in STEM learning activities, personalization, leveraging the power of technology tools, using projects as vehicles for STEM engagement, and putting the student at the center of the learning process.

The literature review reveals a K-12 STEM learning deficit in the United States and that makerspaces can potentially increase STEM learning outcomes for students. As a recent trend, it is still being determined how makerspaces are being incorporated by K-12 teachers into the curriculum. This study aims to examine the staff members at one urban secondary school in the Midwestern United States and their experience with adopting a makerspace into their instructional practice using the UTAUT model of technology acceptance and use.

## Research Activities and Student/Staff Involvement

*Please provide an overview of all primary and secondary research activities associated with this study. Please use this space to describe, as thoroughly as possible, all that will be asked of your research subjects (e.g. surveys, focus groups, observations, etc.)*

The primary research activity is a school staff survey to be taken online or on paper as preferred by the participant.

The survey consists of 20 Questions, 6 demographic in nature and 14 Likert style items related to constructs found in the UTAUT model.

Below is the complete survey.

**Instructions**

This survey examines K12 makerspaces as an innovation to classroom instruction using a technology adoption theory: the Unified Theory of Acceptance and Use of Technology (UTAUT). The components of UTAUT used in this survey are Performance Expectation, Effort Expectation, Social Influence, and Behavioral Intention.

Makerspaces are 21st-century workshops that are an evolving phenomenon in K-12 education. Generally, the idea is for learners to make a physical or digital artifact from the tools/resources available in the space. Learning happens in the making. Each makerspace will vary with audience, setting, and available resources, but some common stations include 3D printing, electronics, vinyl cutting, building blocks, sewing, repair, deconstruction table, and design.

Please enter a response for each of the questions that follow.

**Demographic Information**

1. What is the gender with which you most identify?
    1. Male
    2. Female
    3. Prefer not to say

2. What is your age?
dropdown list by age from 18 – 90

3. How many years of experience do you have with classroom instruction?
dropdown list from 1 – 50+

4. What is the primary subject you have experience in?
    1. English
    2. Mathematics
    3. Science
    4. Social Studies
    5. Career and Technical Education
    6. Physical Education
    7. World Language
    8. Art
    9. Special Education

5. What is your primary role at school?
    1. Classroom Teacher
    2. Classroom Aide
    3. Counselor
    4. Instructional Coach
    5. Technology Coordinator
    6. Administrator
    7. Program Coordinator

6. What is the primary grade level of students you work with?
    1. 9
    2. 10
    3. 11
    4. 12

**Performance Expectancy**

Performance Expectancy is the degree to which school staff members believe makerspaces will improve their performance as an educator.

7. I would find the makerspace to be useful as an educator.
SD-D-SD-N-SA-A-SA

8. Using the makerspace enables me to achieve learning goals for students more quickly.
SD-D-SD-N-SA-A-SA

9. Using the makerspace is easy for me.
SD-D-SD-N-SA-A-SA

**Effort Expectancy**

Effort Expectancy is the degree of ease associated with using a makerspace.

10. My interaction with the makerspace would be clear and

understandable.
SD-D-SD-N-SA-A-SA

11. It would be easy for me to become skillful at using the makerspace.
SD-D-SD-N-SA-A-SA

12. I would find the makerspace easy to use.
SD-D-SD-N-SA-A-SA

13. Learning to teach in a makerspace is easy for me.
SD-D-SD-N-SA-A-SA

**Social Influence**

Social Influence is the degree to which others influence your use of a school makerspace.

14. People who influence my behavior think I should use the makerspace.
SD-D-SD-N-SA-A-SA

15. People who are important to me think that I should use the makerspace.
SD-D-SD-N-SA-A-SA

16. The school administration has been helpful in the use of the makerspace.
SD-D-SD-N-SA-A-SA

17. In general, the school organization has supported the use of the makerspace.
SD-D-SD-N-SA-A-SA

**Behavioral Intention To Use a Makerspace**

18. I intend to use the school makerspace in the next 6 months
SD-D-SD-N-SA-A-SA

19. I predict I would use the school makerspace in the next 6 months.
SD-D-SD-N-SA-A-SA

20. I plan to use the school makerspace in the next school year.
SD-D-SD-N-SA-A-SA

**Thank You**

We thank you for the time you spent taking this survey. Your response has been recorded and will aid in understanding K12 makerspaces.

## Research Methodology and Analytical Technique

*Please provide an overview of your research methodology and specific analytical techniques that will be utilized as part of this study.*

This study will utilize a quantitative design approach from a postpositivist philosophical perspective. This type of research "is about explaining phenomena by collecting quantitative data, which are analyzed by mathematically based methods" (Muijs, 2022, p. 9). A postpositivist worldview means that this researcher believes (a) there is an objective reality (Muijs, 2022); (b) that knowledge is developed from "careful observation and measurement of the objective reality that exists" (Creswell, 2014, p. 7); (c) theories about individual behavior need to be tested to confirm or refute them. This research will use the Venkatesh et al. (2003) UTAUT model to assess the Behavioral Intent (BI), the dependent variable, of school staff members of a large, urban secondary school to use a makerspace to achieve learning goals. The predictive variables, as detailed in Chapter 2, are Performance Expectations (PE), Effort Expectation (EE), and Social Interaction (SI) and are moderated by Age, Gender, and Experience. Figure 2 shows a graphic representation of UTAUT adapted to suit this study.

The specific type of quantitative research applied to this study is correlational (Fraenkel & Wallen, 2009; Field, 2018) because it will assess the relationships between the variables outlined above rather than their causal effects. This contrasts with an experimental study where the variables are manipulated by the researcher. Data will be collected through a cross-sectional survey instrument based on the tool adapted from the UTAUT model (Venkatesh et al. 2003). Fraenkel and Wallen (2009) define a cross-sectional survey as compiling data from a predetermined population at just one point. As noted in the literature review, the UTAUT survey instrument has been used in many studies across the globe in a wide variety of settings (Venkatesh et al., 2016; Yee & Abdullah, 2021).

## Benefits and Commitment to Equity

## Benefit to CPS

**Which (if any) CPS vision goals does your research support?**

50% of students will meet college readiness benchmarks on the SAT.
65% of 2nd grade students will be at or above national attainment for math.
70% of students will be at or above national attainment for math.
78% of graduates will enroll in college.
90% of freshmen will be on track to graduate high school.
90% of students will graduate high school within five years.

*Click here to access more information on the CPS Vision Goals.*

**Please describe how your project supports each of the Vision Goals selected above.**

Makerspace learning is particularly well suited for achieving learning objectives in STEM subject areas because it aligns with the current research recommendations for improving student outcomes in STEM.

1.) Instruction Grounded in Constructivism.

Constructivism is a learning theory whose fundamental tenets assert that learning is an active process tied to students' experiences and involves social interaction (National Science Teaching Association, 2020; Wilson, 2018). The National Science Teaching Association (2020), in their position statement for STEM teaching and learning, advocated for K-12 educational stakeholders to adopt a constructivist position that moves past the traditional textbook and lecture format. Makerspaces learning is firmly rooted in Constructivism, directly connecting to constructivist theorists Papert, Vygotsky, Piaget, and Dewey.

2. STEM Subject Integration.

Another traditional aspect of STEM learning is the separation of subjects, e.g., math in one class and biology in another. The National Science & Technology Council and the Executive Office of the President of the United States (2018) recommended that STEM instruction be approached from multiple-disciplinary perspectives in their report on a STEM education strategy for the United States. The rationale for their endorsement of engaging multiple subjects in school projects is that it makes lessons more engaging for the learner, requires a broad set of skills – communication, collaboration, and critical thinking, and provides a context for STEM education that is grounded in authentic problems or issues National Science & Technology Council and the Executive Office of the President of the United States (2018). Makerspaces task students to create a physical or digital artifact that requires a blend of different subjects depending on the focus of the project.

3. Use Technology Tools.

The National Education Technology Plan (United States Department of Education, 2017) stated that "technology has the potential to accelerate, amplify, and expand the impact of powerful principles of learning" (p. 5) and

outlined five reasons why integrating technology into the classroom should be a goal of every educator:
• Technology can personalize learning, increasing student engagement and relevance.
• Technology can help organize learning around real-world challenges and project-based learning.
• Technology can help facilitate learning outside of the classroom.
• Technology can help students discover and pursue passions and personal interests.
• Technology access, when equitable, can make learning experiences available to all learners.
21st Century technology tools are at the heart of makerspace learning environments.

**Which (if any) of the CPS core values does your research support?**
Academic Excellence
Student Centered

**Please describe how your project supports each of the core values selected above.**
Makerspaces directly support Student-Centered learning because the student owns the physical or digital artifact created in the space. Student ownership of the project, in turn, drives Academic Excellence. There are also clear opportunities for students who pursue STEM careers. These include the following.

Students developing STEM skills and attaining STEM jobs benefit the economy and national defense; it is also advantageous for the individual because STEM jobs, on average, have higher wages, lower unemployment, and projected growth over the next decade (Fayer et al., 2017). Evidence for each category (wages, unemployment, job growth) is presented below:
• Wages. "In 2019, median earnings for full-time, year-round workers ages 25 and older in a STEM job were about $77,400. The comparable median for workers in other, non-STEM occupations was $46,900" (Kennedy et al., 2021, section 6 para 1).
• Unemployment. At all educational attainment levels, the STEM workforce has consistently had lower unemployment rates than non-STEM workers in the previous decade (National Science Board, 2021).
• Growth. "The U.S. Bureau of Labor Statistics (BLS) 2019 - 2029 employment projections show that occupations in the STEM field are expected to grow 8.0% by 2029, compared with 3.7 percent for all occupations" (Zilberman & Ice, 2021, para. 1).

**How does this project support the district broadly?**
Early studies of makerspaces have shown that they have the potential to increase student outcomes in STEM subject areas. This study will help reveal how school staff members view makerspaces as an innovation to classroom instruction, which can help district administrators allocate resources for STEM learning support.

## Commitment to Equity

**In what ways does this project reflect/challenge/progress the district's commitment to equity?**
I am interested in the kind of learning makerspaces provide: hands-on, student-centered, and STEM-focused. I am also a teacher who understands that school staff members have significant workloads.
With that in mind, I have kept the survey short -it can be done in 10 minutes and confidential - participants can feel free to give honest answers without having to worry about any judgment from others.

*Reflect on the district's equity framework as well as the following: As a researcher, what is my privilege / bias when it comes to this question? Am I assuming that Black and brown students will inherently perform poorly? Have I consulted those whose communities I want to research? Is the research designed with the holistic humanity of the people I am researching in mind? Do I perceive the communities I want to research as allies, or as research subjects? Am I interrogating / challenging policies and systems that may be contributing to inequities? Will this project create an undue burden on the communities I am seeking to research?*

**How are your research activities accessible to individuals with disabilities?**
An online survey is the primary method of data collection in this survey. Northern Illinois University's Qualtrics is the platform used. Qualtrics surveys are compliant with Web Content Accessibility Guidelines and is designed to be accessible to the widest audience possible.

**Are your research activities translated into languages other than English as appropriate for the community?**
Northern Illinois University's Qualtrics survey-taking platform, used in this study, enables participants to change the language if needed. By default, it is set to English.

**Please use the table below to list all District CPS Supporters and the role they will have in your study. Use the details box to describe your supporters' title and role in the district. List your primary supporter first.**

*Please click "save" after each line.*

| CPS Supporter Email Address | CPS Supporter Details |
|---|---|

**Link to New Contact Form**
User had the option to start a different form here.

**How will you share your research findings with the population(s) you are studying?**
An information sheet with the study findings will be distributed. It will be concise and easy to understand. Participants' personal information will not be shared.
The completed dissertation will also be publicly available.

## Research Activities

**Start Date of Recruitment**

12/02/2024

**End Date of Recruitment**
12/19/2024

**Please provide the date that you will begin primary data collection**

12/05/2024

**Please provide the end date of primary data collection**
12/19/2024

**Please provide the date that you will begin analysis**

01/06/2025

**Please provide the end date of analysis**
05/09/2025

**Please provide the approximate date that you will finalize your research report.**

09/01/2025

**Description of Deliverable/Final Product (i.e., academic/journal article, white paper, memo, report)**

Information sheet summarizing findings.
Dissertation.

**Will any portion of this research, including recruitment or consent, take place during or in any way interfere with standard activities?**

No

*With very few exceptions, research procedures cannot be carried out during or in any way interfere with standard activities, including instruction time or professional development sessions.*

**Will this study involve study subject randomization or a control group?**

No

**Will your research employ study-subject deception or non-disclosure?**

No

**Will this research involve Product Testing?**

No

**Will this research involve collection of biological samples or biometric data?**

No

**Does this research involve other research procedures not described previously?**

No

**Is this research tied to a standard or novel curriculum, teaching or other program, staff professional development training or program, or other non-research activity or activities?**

No

**Does this study involve the use of educational technology (including survey tools, video conference platforms, and third party websites. See note for add'l details)?**

Yes

*Please be aware that under The Student Online Personal Protection Act, SOPPA (105 ILCS 85/), any platform students interact with must be compliant with current data security and student privacy regulations. Please note that this definition includes online survey tools such as Qualtrics. Please use the following website to check if your proposed platform is complaint with SOPPA: https://cps.app.learnplatform.com/new/public/tools*

**Please describe the use of educational technology as part of this study**

This study only involves adult staff members. The survey platform used is Qualtrics, and a paper survey option is available.

**Is the described educational technology a CPS SOPPA operator?**

No

*Please use the following website to check if your proposed platform is complaint with SOPPA: https://cps.app.learnplatform.com/new/public/tools*

## Study Population

**Will you be submitting a secondary Data Request?**

No

**RRB Protocol Number**

2024-1980

*This is your assigned RRB Number. Please reference this in any data request associated with this study.*

## Study Subject Inclusion Criteria

The target population for this study is K-12 school staff members with access to a school makerspace. All school staff in direct contact with students who influence classroom instruction can take the survey: teachers, administrators, instructional coaches, technology coordinators, counselors, program coordinators, mentors, and classroom aides.

*If the research involves more than one study subject population (e.g. students, parents, teachers, staff), please individually detail the inclusion criteria for each.*

## Study Subject Exclusion Criteria

Staff members who are not eligible include school security, nurses, social workers, psychologists, and custodians.

*If the research involves more than one study subject population, please individually detail the inclusion criteria for each*

## Please select all special populations that may be targeted for your study

*No answer provided.*

## Describe the potential direct and/or indirect benefits for all detailed research procedures and populations

The benefits of participation are increased knowledge of K12 staff members intentions to use makerspaces for instructional goals and contributions to the understanding of makerspaces in K-12 institutions.

## Describe the anticipated potential risks, however minimal, associated with the detailed research procedures and subject populations

Breach of confidentiality revealing school staff responses to the survey.

Loss of time to take the survey.

There are no other reasonably foreseeable or expected risks.

**How will the identified risks for all research procedures and subject populations be minimized and/or mitigated to the greatest extent possible?**

Collected data will be secured in an encrypted hard drive stored in a locked box. Any paper surveys taken will be stored in locked box.

The number of questions has been intentionally kept short to minimize the amount of time it takes to complete.

**What procedures will you use in the event that research questions/processes produce observable stress/distress in subjects?**

Participants may opt out at any time when taking the survey.

**Will you compensate study subjects?**

Yes

**Detail the proposed compensation (monetary and/or non-monetary) for each research procedure and population**

A voucher for a coffee and snack from the school coffee shop. It is valued at $2.50. One voucher will be provided for each participant.

*Student incentives must be appropriate, equitable, and reasonable in amount. All staff incentives are limited to $50 or less in a given year. Any amount in excess will require the secondary employment form to be completed by staff participants, or otherwise have the amount allocated to the school.*

**Describe when and where study subjects will be compensated and detail the mechanisms that will be in place to ensure study subject privacy when distributing compensation.**

The introductory letter of the study, placed in staff mailboxes, will include the voucher for a coffee and snack at the school cafe .

**Describe the compensation schedule for participants that withdraw from the research or that are withdrawn from the research by the study team.**

All potential participants will receive the voucher before the survey is available.

Vouchers will not be rescinded if the potential participant opts out of taking the survey.

## Study Recruitment

**Outline every aspect of the recruitment process for teacher participants.**

Day 1: Introductory letter with coffee/snack voucher placed in school staff mailboxes at the school
Day 4: Email sent to school staff district email accounts; survey link is active.
Day 11: Follow-up email sent to school staff email accounts.
Day 14: The letter was placed in school staff mailboxes with the paper survey option.
Day 18: Final email sent to school staff via school district email accounts.

**Outline every aspect of the recruitment process for non-teacher staff participants.**

Day 1: Introductory letter with coffee/snack voucher placed in school staff mailboxes at the school
Day 4: Email sent to school staff district email accounts; survey link is active.
Day 11: Follow-up email sent to school staff email accounts.
Day 14: The letter was placed in school staff mailboxes with the paper survey option.
Day 18: Final email sent to school staff via school district email accounts.

**Please attach all recruitment materials not attached elsewhere (Optional).**

Recruitment Materials  Recruitment Materials

Deleted Attachments: 2 (Most Recent: Introductory Letter on 08/25/2024 4:38 PM ET)

**Please attach all consent/assent forms associated with this study not already attached elsewhere (Optional).**

*No answer provided.*

**Identify study team members who will recruit subjects.**

Kevin Rutter

**Will this research involve screening procedures**

No

## Compliance

**FERPA**

*For more information on FERPA, click here.*

**Is any aspect of this research subject to FERPA?**
No

**ISSRA**

*For more information on ISSRA, click here.*

**Is any aspect of this research subject to ISSRA?**
No

**PPRA**

*For more information on PPRA, click here.*

**Is any aspect of this research subject to PPRA?**
No

## Permission, Confidentiality, and Security

**Attach a draft of the permission letter that will be sent to school Principals**

| | | |
|---|---|---|
| LettertoPrincipalMoran.docx | Support Letters | *Please note that Principals have final authority over what happens in their schools.* |

**How will you protect the privacy of prospective research subjects? Please detail how study subject privacy will be protected during recruitment, screening, consent, and all research procedures. Provide an accounting for all applicable research procedures and study populations.**

Rigorous measures will be taken to protect the privacy of participants through every step of the process:
Recruitment: Initial contact will happen with a paper letter placed in the private mailboxes of staff members. The letter clearly states that the survey is voluntary and staff members are free not to participate.
Consent: A consent document provides comprehensive details of the study, including privacy protections and the ability to withdraw from survey at any time.
Data Collection: This survey is designed to glean the minimum amount of information needed from participants, lowering the risk of identification. IP addresses will not be collected from submitted surveys.
Storage: Data will be stored on an encrypted hard drive that will be stored in a locked box. Participants who opted to take the paper survey will have their completed documents stored in a locked box. Northern Illinois University's Institutional Review Board requires that data be stored in this fashion for 3 years after study completion. At that time all data will be destroyed.
Data analysis: participant data will be protected in the final reports by using aggregated data and avoiding identifiable details.
Ethical Considerations: The Northern Illinois University Institutional Review Board has approved this research plan.

**Describe the data confidentiality or security provisions that will be in place for all research data.**

All data collected digitally will be stored on a password protected hard drive. When not in use for work on this study, the hard drive will be stored in a locked box. Collected paper consent forms and completed surveys will be stored in a locked box. All data will be destroyed after the required minimum amount of time stored prescribed by Northern Illinois University IRB, 3 years.

**How will you store participant data?**

Without any identifiers or codes

*These details must be included in all applicable consent forms*

**Explain how data will be de-identified. What information will be contained on the record such that re-identification is impossible?**
This study does not employ direct identifiers - name, IP address, phone numbers, etc. Collected demographic data - gender, age, experience, department, grade level taught, and role, will be presented in aggregate in the final report. It will not be possible to re-identify individuals from the aggregate.

**Will you keep participants' contact information on file after the data have been collected?**

No

**Will you share individual-level data with other researchers or practitioners beyond the designated key research personnel?**

No

**What will you do with the data once the research has been completed (choose all that apply)?**

Retain data for three years or longer post-completion, then destroy it

*Please note that the district discourages storing study data for longer than three years after study completion.*

**Please describe the purpose for which you will be storing data after the conclusion of the study. Also, explain the planned duration (i.e. how long) you will retain data**

The Northern Illinois University Institutional Review Board requires storing all data for three years.

## Attachments

**Please attach all miscellaneous attachments**

*No answer provided.*

*If you are resubmitting your protocol following initial review, please attach your response letter here.*

**Are there any additional finalized contracts or agreements associated with this research that have not been attached elsewhere as part of this application (e.g. CPS Data Authorization Agreements)?**

No

**Are there any pending (i.e. not yet signed by both parties) contracts or agreements associated with this research that have not been attached elsewhere as part of this application?**

No

## Acknowledgements

## Acknowledgements

**Please acknowledge the following:**

✔ All parts of this submission are accurate, complete, consistent, and clear.

✔ I have accurately and completely described all intended human subjects research procedures and the populations with whom they will be carried out.

✔ I have attached all study materials, including, but not limited to, all materials that will be given to, sent to, read to, or otherwise used with all prospective study subject populations.

✔ This submission adhere to all CPS policies and guidance as outlined in the link below

*https://www.cps.edu/about/district-data/conduct-primary-research/*

✔ I have accurately identified all personnel who will be involved in this study.

✔ I acknowledge that any/all changes required by the CPS RRB in the course of its review of this submission will be reported to my IRB of record during the entire lifetime of this study.

✔ I attest that I will work with my IRB of record to address any concerns raised in the review of this submission.

✔ I attest that all of the research procedures detailed in this submission have been carried out with prospective IRB review and approval.

✔ I agree to comply with all background check and volunteer procedures required of my study, per the official CPS Volunteer Policy (link provided below):

*https://policy.cps.edu/download.aspx?ID=272*

## Submission Date

08/10/2024

**All RRB new submissions, modifications, continuing reviews require a $50 processing fee. Please click on the following link to access our payment system. You will need to reference your assigned RRB number listed below:**

**CPS RRB/Data Request ePay System**

*Once you navigate to the Illinois E-Pay Site, please click on the blue text "RRB / Data Request Payment Option " to display the appropriate payment options. Once selected, your total will be displayed. Do not attempt to type in your total manually.*

**RRB Protocol #**
2024-1980

**Payment Confirmation Number**
20000363

**Load Initial Submission into IRBManager**
**- Submitted 08/31/2024 8:39 AM ET by System, The**

## Research Office Pre-Review
## - Submitted 10/23/2024 2:26 PM ET by Corson, Adam

### Pre-Review

**RRB Number**

2024-1980

**Ready for Review**

Ready for Review

**Type of Review**

Ad Hoc

**Primary Reviewer**
Corson, Adam

**Review Due Date**
10/23/2024

**Comments for Reviewer**
n/a

**Supplementary Site Output**
609729 - Carl Schurz High School

**School Contacts**

N Rodriguez, Anthony

**Email:** anrodriguez@cps.edu **Phone:**

**Administrative Processor**

Corson, Adam

**Email:** ACorson1@cps.edu **Phone:**

**Payment Received**

Yes

## Current associated projects

N/A

**Associated Projects**
No answer provided.

*Please enter the record number of any data request or projects associated with this project. Each record number will need to be provided with a link to the project screen using the Hyperlink Manager icon.*

## Administrative / Ad-Hoc Review
## - Submitted 10/23/2024 2:55 PM ET by Corson, Adam

### Administrative / Ad-Hoc Review

**Review Outcome**

| Type | Reviewer | Outcome | Assigned | Due | Complete |
|---|---|---|---|---|---|
| Primary Initial Review | Corson, Adam | | 10/23/2024 | 10/23/2024 | |

**Reviewer Notes**

## Post-Administrative / Ad-Hoc Processing
## - Submitted 10/23/2024 2:58 PM ET by Corson, Adam

### Office Processing

#### Verify Reviewer Determination

Approve

#### Follow-up Required?

Follow-up Not Required

#### Administrative Approval

Simple Approval

**Approval Date**
10/23/2024

**Approval Period (in number of months)**
12

**Notes for Letter**
n/a

#### Background Check Determination

**Reviewer Background Check Recommendation**
N/A

**Display Proposed Study Participants**
Teachers
Other Staff

**Display Study Interventions**
Questionnaire

**Display Study Contacts**

**Please select the level of background check required for researchers involved with primary data collection.**
CPS Staff Background Check

**Justification for Background Check**
No add'l background check.

## Determination Letter Finalization
## - Submitted 10/23/2024 3:28 PM ET by Corson, Adam

### Review Generated Letter and Confirm Before Sending

**RRB #**

2024-1980

**Study Title**
K12 TEACHER INTENTION TO USE A MAKERSPACE: AN ANALYSIS USING THE UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY

**Principal Investigator**

Rutter, Kevin

**Email:** KWRutter@cps.edu **Phone:**

**Redisplayed Board Determination**

**Determination Letter**

**In some cases you may see other determination letters attached by the submitter. However, only the generated determination letter will be sent in the decision email.**

| Name | Type | Date |
|---|---|---|
| RRB#2024-1980-Kevin Rutter 2024-10-23.docx | Determination Letter | 10/23/2024 |

*This determination letter will be automatically attached to an email being sent to the principal investigator.*

**Please use the link below, click on the Attachments link on the left side of the page if you need to upload an edited version of the above letter.**
New Submission defined 08/31/2024

**Output Background Check Level**

N/A

**Additional Attachments to Decision Email**

*No answer provided.*

## Notes for Determination Email

*No answer provided.*

**Study Site Contact Background Check Expirations**

| Name | Role | Background Check Expiration |
|---|---|---|
| Rutter, Kevin | Principal Investigator | Missing |

**Please use the text box above to indicate the background check level required or any other pertinent information.**
CPS Staff Background Check

**Background Check Level Justification**
No add'l background check.

**Other Notes in Letter**
n/a

## RRB Meeting Date for Acknowledgment of Final Determination

12/06/2024 — *Please select the next meeting date of the RRB.*

## Please enter the date by which the coordinator should submit the Data Use Agreement. Automatic notifications will be sent out based upon this date.

11/07/2024

**SURVEY**

**Instructions**

This survey examines K12 makerspaces as an innovation to classroom instruction using a technology adoption theory: the Unified Theory of Acceptance and Use of Technology (UTAUT). The components of UTAUT used in this survey are Performance Expectation, Effort Expectation, Social Influence, and Behavioral Intention.

Makerspaces are 21st-century workshops that are an evolving phenomenon in K-12 education. Generally, the idea is for learners to make a physical or digital artifact from the tools/resources available in the space. Learning happens in the making. Each makerspace will vary with audience, setting, and available resources, but some common stations include 3D printing, electronics, vinyl cutting, building blocks, sewing, repair, deconstruction table, and design.

Please enter a response for each of the questions that follow.

**Commented [KR1]:** rewrite

**Demographic Information**

1. What is the gender with which you most identify?
   a. Male
   b. Female
   c. Prefer not to say

2. What is your age?
   dropdown list by age from 18 – 90

3. How many years of experience do you have with classroom instruction?
   dropdown list from 1 – 50+

4. What is the primary subject you have experience in?
   a. English
   b. Mathematics
   c. Science
   d. Social Studies
   e. Career and Technical Education
   f. Physical Education
   g. World Language
   h. Art
   i. Special Education

5. What is your primary role at school?

a. Classroom Teacher
b. Classroom Aide
c. Counselor
d. Instructional Coach
e. Technology Coordinator
f. Administrator
g. Program Coordinator

6. What is the primary grade level of students you work with?
   a. 9
   b. 10
   c. 11
   d. 12

**Performance Expectancy**

Performance Expectancy is the degree to which school staff members believe makerspaces will improve their performance as an educator.

7. I would find the makerspace to be useful as an educator.
   SD-D-SD-N-SA-A-SA

8. Using the makerspace enables me to achieve learning goals for students more quickly.
   SD-D-SD-N-SA-A-SA

9. Using the makerspace is easy for me.
   SD-D-SD-N-SA-A-SA

**Effort Expectancy**

Effort Expectancy is the degree of ease associated with using a makerspace.

10. My interaction with the makerspace would be clear and understandable.
    SD-D-SD-N-SA-A-SA

11. It would be easy for me to become skillful at using the makerspace.
    SD-D-SD-N-SA-A-SA

12. I would find the makerspace easy to use.
    SD-D-SD-N-SA-A-SA

13. Learning to teach in a makerspace is easy for me.
    SD-D-SD-N-SA-A-SA

**Social Influence**

Social Influence is the degree to which others influence your use of a school makerspace.

14. People who influence my behavior think I should use the makerspace.
    SD-D-SD-N-SA-A-SA

15. People who are important to me think that I should use the makerspace.
    SD-D-SD-N-SA-A-SA

16. The school administration has been helpful in the use of the makerspace.
    SD-D-SD-N-SA-A-SA

17. In general, the school organization has supported the use of the makerspace.
    SD-D-SD-N-SA-A-SA

**Behavioral Intention To Use a Makerspace**

18. I intend to use the school makerspace in the next 6 months
    SD-D-SD-N-SA-A-SA

19. I predict I would use the school makerspace in the next 6 months.
    SD-D-SD-N-SA-A-SA

20. I plan to use the school makerspace in the next school year.
    SD-D-SD-N-SA-A-SA

**Thank You**

We thank you for your time spent taking this survey.
Your response has been recorded and with aid in understanding how K12 makerspaces.

Northern Illinois University
*Your Future. Our Focus.*

Consent to Participate in a Research Study

Title of Study: K12 Teacher Intention To Use a Makerspace: An Analysis Using the Unified Theory of Acceptance and Use of Technology

Investigator Name: Kevin Rutter
Dept: Educational Technology, Research and Assessment
Phone: 312-203-8637

Key Information

- This is a voluntary research study on K12 makerspaces
- This study involves a 10-minute survey of school staff members
- The benefits include contributions to the K12 makerspace knowledge base; the risks include loss of time.

Description of the Study

The purpose of the study is to ask teachers about their perceptions of makerspace learning environments, specifically their thoughts on makerspaces as places to learn, what barriers they see as impediments to using makerspaces, ways to incorporate makerspaces into instruction, and for those teachers using makerspaces for instruction, in what ways are they using it. If you agree to be in this study, you will be asked to complete this online survey.

Risks and Benefits

The study has the following risks: losing time to complete the survey. There are no other reasonably foreseeable or expected risks. The benefits of participation are increased knowledge of K12 staff members' intentions to use makerspaces for instructional goals and contributions to understanding makerspaces in K-12 institutions.

Confidentiality

- This study is confidential. Paper surveys will be kept in a locked cabinet and destroyed after the data has been digitally recorded.
- The records of this study will be kept strictly confidential. Research records will be kept in a locked file, and all electronic information will be coded and secured using a password-protected file. No information will be included in this report that would make it possible to identify you.

Your Rights

The decision to participate in this study is entirely up to you. You may refuse to take part in the study at any time. Your decision will not result in any loss of benefits to which you are otherwise entitled. You have the right to skip any question or research activity and withdraw completely from participation at any point during the process. You have the right to ask questions about this research study and to have those questions answered before, during, and after the research.

If you have any further questions about the survey, don't hesitate to get in touch with the researcher, Kevin Rutter, at Z1716726@students.niu.edu or by telephone at 312-203-8637. Additionally, if you have any questions about your rights as a research participant that have not been answered by the investigator or if you have any problems or concerns that occur as a result of your participation, you may contact the Office of Research Compliance, Integrity, and Safety at (815)753-8588.

Future Use of the Research Data

Your information collected in this research will not be used or distributed for future research, even if all identifiers are removed. Your clicking of the RED button indicates that you have decided to volunteer as a research participant for this study and have read and understood the above information.

**I understand that, by clicking the RED button below. I am providing my informed consent to participate in this study.**

→

NORTHERN ILLINOIS UNIVERSITY
Division of Research and Innovation Partnerships

# Approval Notice
**Initial Review**

20-Aug-2024

TO: Kevin Rutter (Z1716726)
College of Education

RE: Protocol # HS24-0374 "**K12 Teacher Intention To Use A Makerspace: An Analysis Using the Unified Theory of Acceptance and Use of Technology**"

In a preliminary review, the **Initial Submission** of the above named research protocol was determined to meet the definition of human subjects research according to the federal regulations. The submission was then reviewed and approved by the Institutional Review Board through the expedited review process [45 CFR 46.110(b)(1) category 7] under **Member Review** procedures on **20-Aug-2024**. Please note the following information about your approved research protocol:

**Protocol Approval period:** 20-Aug-2024 - 19-Aug-2025

It is important for you to note that **as an investigator conducting research that involves human participants, you are responsible for ensuring that this project has current IRB approval at all times.** If your project will continue beyond the above date, or if you intend to make modifications to the study, you will need additional approval and should contact the Office of Research Compliance, Integrity, and Safety for assistance. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems or risks to subjects or others.

Please note that the IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

**Informed Consent:**

Unless you have been approved for a waiver of the written signature of informed consent, this notice includes a date-stamped copy of the approved consent form for your use. NIU policy requires that informed consent documents given to subjects participating in non-exempt research bear the approval stamp of the NIU IRB. This stamped document is the only consent form that may be photocopied for distribution to study participants.

If consent for the study is being given by proxy (guardian, etc.), it is your responsibility to document the authority of that person to consent for the subject. Also, the committee recommends that you include an acknowledgment by the subject, or the subject's representative, that he or she has received a copy of the consent form.

**You are responsible for retaining the signed consent forms obtained from your subjects for a minimum of three years after the study is concluded**.

**Continuing Review:**

Continuing review of the project, conducted at least annually, will be necessary until data collection is complete and you no longer retain any identifiers that could link the subjects to the data collected. Please remember to use your **protocol number** (**HS24-0374**) on any documents or correspondence with the IRB concerning your research protocol.

**Closing the Study:**

Please note that a **final report submission** should be created in the record in lieu of an annual continuation form if data collection has ended and the data are free of identifiers. The final report is a separate submission form in the list of options in the InfoEd record, and it may be submitted prior to the annual review deadline.

With all of this said, the IRB extends best wishes for success in your research endeavors!

**Please see the RIPS website for guidance on the impact of COVID-19 on research(including face-to-face data collection) https://www.niu.edu/divresearch/covid/index.shtml**

**Introductory Letter**

Dear School Staff Member,

My name is Kevin Rutter and I am a graduate student at Northern Illinois University seeking a doctoral degree in Instructional Technology. I am asking for your help on a research project involving teacher perspectives and attitudes toward makerspaces as learning environments

In the next couple of days, you will get an email, to your professional teacher account, that has a link to a survey about makerspaces. Please complete this survey at your earliest convenience. It should only take about 10-15 minutes to complete and is voluntary.

As a token of my appreciation, please find enclosed a voucher for a free coffee/snack at the school cafe.

Any questions or concerns can be directed to my e-mail at Z1716726@students or call at (312) 203-8637.

Sincerely,

Kevin Rutter

**Email with Research Survey link**

Subject Line: Survey Request

Dear School Staff Member,

Earlier this week I sent you a letter asking for your help with an important survey.

My name is Kevin Rutter. I am a Northern Illinois University doctoral student in the Educational Technology, Research and Assessment Department. My dissertation chair is Dr. Cindy York. I am writing to invite you to participate in my dissertation research study, *K12 Teacher Intention to Use a Makerspace: An Analysis Using the Unified Theory of Acceptance and Use of Technology.*

The survey is voluntary, confidential, and should take about 10-15 minutes.

Click on the following link to take the survey:

The survey link will be active for the next 14 days.

Your participation is very important, and I appreciate you considering this request.

Thank you,

Kevin Rutter

**Follow-up Email**

Subject Line: Follow-up Survey Request

Dear School Staff Member,

I am writing to remind faculty members to please help complete the important linked survey, if you have not done so already. Many faculty members have finished the survey so far, thank you!

To recap the highlights, my name is Kevin Rutter. I am a Northern Illinois doctoral student in the Educational Technology, Research, and Assessment Department. My dissertation Chair is Dr. Cindy York. My dissertation research study is titled: *K12 Teacher Intention to Use a Makerspace: An Analysis Using the Unified Theory of Acceptance and Use of Technology.*

The survey is voluntary, confidential, and should take about 10-15 minutes.

Click on the following link to take the survey:

The survey link will be open for 7 more days.

Your participation is very important. Thank you, in advance, for your consideration of this request.

Sincerely,

Kevin Rutter

**Letter with paper survey option**

Date:
Re: Survey

Dear School Staff Member,

Recently, I wrote an email asking for your help in my doctoral dissertation. Almost all faculty members have responded. Thank you! I realize how busy everyone is and that technology does not always work as planned. Therefore, I am enclosing a paper version of the survey to be used ONLY if you have not done the online version previously.

The survey is voluntary, confidential, and should take about 10-15 minutes. Please return the paper survey to my mailbox when completed only if you have not done the online survey.

This survey is for my dissertation research titled: *K12 Teacher Intention to Use a Makerspace: An Analysis Using the Unified Theory of Acceptance and Use of Technology.* Thank you for considering this important request.

Sincerely,

Kevin Rutter

P.S. The online survey link will still be active for 4 more days.

Enclosure: paper survey

**Final Email**

Subject Line: Thank you!

Dear School Staff Member,

I want to thank you for your participation in my dissertation research regarding makerspaces as learning environments. Your contribution makes a big difference and I hope to share my final report in the coming months.

If you still have not yet taken the survey, it is available at the following link:

The link will only be active for 24 more hours.

It should take 10-15 minutes, is voluntary, and confidential.

Kind Regards,

Kevin Rutter

Kevin Rutter
1530 W. Hood Avenue
Chicago, IL, 60660
(312) 203 – 8637

August 26, 2024

Dr. Heidy Moran
Carl Schurz High School
3601 N. Milwaukee Avenue
Chicago, IL 60641

Dear Principal Moran,

My name is Kevin Rutter, and I am currently a Ph.D. candidate at Northern Illinois University. I am writing to request permission to conduct a survey of staff members. The subject of the survey is the staff use of the school makerspace and is titled *K12 Teacher Intention to Use a Makerspace: An Analysis using the Unified Theory of Acceptance and Use of Technology.* I assure you that all responses will be kept strictly confidential, and only aggregate data will be reported. To ensure this, the survey will be conducted using a secure online platform with strict access controls. Paper surveys will be made available for those who wish to use something other than the online platform. Any completed paper surveys will be stored securely in a lock box. This research aims to understand further how school staff intends to use the school makerspace while respecting and protecting the privacy of the staff members.

As a teacher, I am mindful of adding to staff members' workloads, so I have made this survey only 20 questions long. It is enclosed for your review. The Northern Illinois University's Internal Review Board has also approved this research project.

I appreciate your consideration of this request and look forward to the possibility of conducting this research at Carl Schurz High School. If you have any questions about this research, please call (312) 203 – 8637 or email Z1716726@students.niu.edu. Dr. Cindy York chairs my dissertation committee; her contact information is cindy.york@niu.edu

Sincerely,

Kevin Rutter

Enclosure: Survey questions

**Survey Instructions and Items**

**Instructions**

This survey examines K12 makerspaces as an innovation to classroom instruction using a technology adoption theory: the Unified Theory of Acceptance and Use of Technology (UTAUT). The components of UTAUT used in this survey are Performance Expectation, Effort Expectation, Social Influence, and Behavioral Intention.

Makerspaces are 21st-century workshops that are an evolving phenomenon in K-12 education. Generally, the idea is for learners to make a physical or digital artifact from the tools/resources available in the space. Learning happens in the making. Each makerspace will vary with audience, setting, and available resources, but some common stations include 3D printing, electronics, vinyl cutting, building blocks, sewing, repair, deconstruction table, and design.

Please enter a response for each of the questions that follow.

**Commented [KR1]:** rewrite

**Demographic Information**

1. What is the gender with which you most identify?
   a. Male
   b. Female
   c. Prefer not to say

2. What is your age?
   dropdown list by age from 18 – 90

3. How many years of experience do you have with classroom instruction?
   dropdown list from 1 – 50+

4. What is the primary subject you have experience in?
   a. English
   b. Mathematics
   c. Science
   d. Social Studies
   e. Career and Technical Education
   f. Physical Education
   g. World Language
   h. Art
   i. Special Education

5. What is your primary role at school?
   a. Classroom Teacher
   b. Classroom Aide
   c. Counselor
   d. Instructional Coach
   e. Technology Coordinator
   f. Administrator
   g. Program Coordinator

6. What is the primary grade level of students you work with?
   a. 9
   b. 10
   c. 11
   d. 12

**Performance Expectancy**

Performance Expectancy is the degree to which school staff members believe makerspaces will improve their performance as an educator.

7. I would find the makerspace to be useful as an educator.
   SD-D-SD-N-SA-A-SA

8. Using the makerspace enables me to achieve learning goals for students more quickly.
   SD-D-SD-N-SA-A-SA

9. Using the makerspace is easy for me.
   SD-D-SD-N-SA-A-SA

**Effort Expectancy**

Effort Expectancy is the degree of ease associated with using a makerspace.

10. My interaction with the makerspace would be clear and understandable.
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11. It would be easy for me to become skillful at using the makerspace.
    SD-D-SD-N-SA-A-SA

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13. Learning to teach in a makerspace is easy for me.

SD-D-SD-N-SA-A-SA

**Social Influence**

Social Influence is the degree to which others influence your use of a school makerspace.

14. People who influence my behavior think I should use the makerspace.
    SD-D-SD-N-SA-A-SA

15. People who are important to me think that I should use the makerspace.
    SD-D-SD-N-SA-A-SA

16. The school administration has been helpful in the use of the makerspace.
    SD-D-SD-N-SA-A-SA

17. In general, the school organization has supported the use of the makerspace.
    SD-D-SD-N-SA-A-SA

**Behavioral Intention To Use a Makerspace**

18. I intend to use the school makerspace in the next 6 months
    SD-D-SD-N-SA-A-SA

19. I predict I would use the school makerspace in the next 6 months.
    SD-D-SD-N-SA-A-SA

20. I plan to use the school makerspace in the next school year.
    SD-D-SD-N-SA-A-SA

**Thank You**

We thank you for the time you spent taking this survey.
Your response has been recorded and will aid in understanding K-12 makerspaces.

42 W. Madison | 2nd Floor | Chicago, IL 60602
Telephone: (773) 553-4444
Fax: (773) 553-2421

10/23/2024

Kevin Rutter

Dear Kevin Rutter,

Thank you for your interest in conducting research in The Chicago Public Schools. The Research Review Board has reviewed your proposal dated 08/31/2024 for research, titled: K12 TEACHER INTENTION TO USE A MAKERSPACE: AN ANALYSIS USING THE

UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY.

The Research Review Board has completed the review of your proposal and has approved your request to conduct this research. Although your study is approved, school principals have final authority over activities that are allowed to take place in the school. If data collection continues beyond a year from this approval, please complete the Modification & Continuing Review Process Form through IRBManager.

Please note the following--

Background Check Level Required: CPS Staff Background Check

Other Notes: No add'l background check. n/a

Upon completion of the research study, a copy of the final report or summary of the results must be provided to the Research Review Board. The Board reserves the right to use the information in the research report or summary for planning, solicitation or grants, and staff development.

Please note that your study has been assigned Project ID #2024-1980. If you have any questions, please contact our office by email at research@cps.edu.

Sincerely,

Sarah Dickson
Co-Chair, Research Review Board