**Teachers’ Perceptions of Online Learning**

# PRINCIPAL INVESTIGATOR: Name: Todd Kettler

Address: MMSCI 318 (Baylor)

Phone #: 254-710-6116

Fax #: n/a

Email: [todd\_kettler@baylor.edu](mailto:todd_kettler@baylor.edu)

CO- or SUB-INVESTIGATORS: Names: Noah Padgett, Laura Shero, Shan Jiang

Institution: Baylor University

Address: MMSCI 318

Phone #: 254-710-6116

Email: [noah\_padgett1@baylor.edu](mailto:noah_padgett1@baylor.edu)

[laura\_shero1@baylor.edu](mailto:laura_shero1@baylor.edu)

[shan\_jiang1@baylor.edu](mailto:shan_jiang1@baylor.edu)

1. **Background and Rationale**

Personality traits have been widely studied for their power to predict behavioral and affective responses (Funder, 1991; Oreg, 2003). In workplace studies, personality traits may be predictive of how people respond to change and innovation (Oreg, 2006). Specifically, individuals with personality profiles reflecting higher levels openness and internal locus of control (Lau & Woodman, 1995)) tend to be more welcoming of workplace change and innovation.

While online learning has been expanding with steady increased use in professional workplace training and higher education settings (Allen & Seaman, 2016), the expansion of online learning has still been much slower moving into K12 educational systems (Borup et al., 2013). However, the Covid-19 pandemic has recently accelerated the use of online learning in educational settings where on-the-ground learning was the dominant mode of delivery. As one might expect, responses and reactions to shifts toward online learning were quite varied. Some educators embraced the changes and saw online learning as an opportunity. On the other hand, other educators viewed online learning as at best a temporary stop-gap to avoid shutting down teaching and learning altogether.

As educational systems continue to operate in the Covid-19 pandemic, some educational leaders may see online learning as an opportunity to permanently innovate and diversify teaching and learning operations. In other words, they see online learning is more than a stop-gap, it is an innovation whose time has come. Those school systems may come out of the Covid-19 pandemic as innovative organizations using online learning pedagogies as efficient transformative learning platforms. Critical to any organizational change is finding the right team to embrace and support the innovative direction of the mission (Galambos et al., 2005). Personality traits may be viable indicators of educator profiles willing to embrace change and the possibilities rather than the drawbacks of online learning.

The purpose of this research is to validate the use of the Perceptions of Online Learning Scale (POOLS) and test hypotheses related to personality traits and perceptions of online scale. This study falls within the research paradigm of differential psychology (Lubinski, 2000) which studies the ways human traits are associated with behaviors including in this case organizational behaviors in educational systems (Sackett, 2020).

**2.0 STUDY Objectives**

Objectives of the Study:

* Validate the factor structure of the Perceptions of Online Learning Scale (POOLS).
* Estimate the relationship teacher personality traits and perceptions of online learning.

Research Questions:

1. Do the items on the POOLS reflect appropriate psychometric properties sufficient for making analytical inferences? (Exploratory and Confirmatory Factor Analysis)
2. Using a Five-Factor Model (FFM) of personality, which personality traits account for variance in teachers’ perceptions of online learning?
3. Does teacher self-efficacy predict variance in teachers’ perceptions of online learning?
4. Does teacher team innovativeness predict variance in teachers’ perceptions of online learning?
5. Are teacher demographic characteristics associated with variance in their perceptions of online learning?

**3.0 SUBJECT Selection & RECRUITMENT**

Subject Population Targeted

* Teachers in K-12 educational systems (target *n* = 500)
* No particular populations will be excluded.
* No vulnerable populations are being recruited.
* Inclusion criteria: Currently teaching in a K-12 school system
* Exclusion criteria: Not currently teaching in a K-12 school system
* Subject age range: 21 to 70 years of age

Recruitment Strategy 1 (Primary)

* Recruit Partner Schools via email recruiting techniques
* Partner schools will agree to let our team send the online survey link to teachers
* Participation of teachers is voluntary, and consent will be the first item in the online survey. Participants can quit the study (survey) at any time.
* No identifying information (name, email, phone) is being collected

Recruitment Strategy 2 (Secondary)

* We will make the link to the survey publicly available on social media seeking volunteer participants who are K-12 teachers to participate.
* Social media for this purpose are: Facebook and Twitter
* Participation of teachers is voluntary, and consent will be the first item in the online survey. Participants can quit the study (survey) at any time.
* No identifying information (name, email, phone) is being collected

Consent

* The only data collection is an online survey.
* Consent will be explained and confirmed as the first item of the online survey.
* Participation is voluntary.
* Participants may voluntarily quit the study at any time.

Data

* Data collected from participants will have no identifying information.
* Data collected from participants will be stored according to security protocols.

1. **research Design & Methods**

Design

* This study is a descriptive, cross-sectional design typical of survey scale research in our field of educational psychology.
* The online survey will include items in the following categories: (a) demographics, (b) personality – five factor model scale, (c) resistance to change scale, and (d) Perceptions of Online Learning Scale (POOLS) (items presented in appendix).e h
* The study will begin upon approval and continue until the estimated sample size is achieved. Estimated time frame: fall of 2020 to fall of 2021.

Scales

* Five Factor Model of Personality with Ten Aspects (published)
* Resistance to Change Scale (published)
* Perceptions of Online Learning Scale (developed for this study by our team)

Method

* Collect data from voluntary participants using an online survey

**5.0 study Activities**

* Seek partner schools as described in recruiting strategy
* Seek participants for the online survey on social media sites
* Analyze and report data according to research questions (above)

Schedule of Activities

* Fall 2020: Construct online survey tool
* Fall 2020: Recruit participants for the online survey
* Fall/Winter 2020: Analyze data collected in the online survey
* Fall/Winter 2020: Write initial research report
* Winter/Spring 2021: Finalize research report and seek viable journal outlet
* Spring 2021: Submit research report for possible academic conference presentation

**6.0 risks & benefits**

Risks

There are minimal risks involved in voluntarily taking an online survey. Participants may exit the survey at any time. To minimize the risk associated with privacy, no personal identifying data will be collected.

Most scales used in the study have been used in previous studies with no history of psychological discomfort associated with the Likert scale responses. The Perceptions of Online Learning Scale (POOLS) is newly developed scale without historical data, but pilot testing and construct validation of the items indicates no or minimal risk of psychological discomfort will be associated with responding to the Likert scale items on the POOLS.

Benefits

The are no known benefits to the individual participants.

The proposed study will benefit society through the improved understanding of the influence of personality traits on organizational change in education, specifically the adoption and use of online learning. This improved understanding can lead to training protocols and support systems to facilitate educational, organizational change involving online learning.

**7.0 analysis**

Data will be collected through online surveys using Qualtrics. Data downloaded from Qualtrics will be managed to account for missing responses and incomplete responses. For data missing completely at random, multiple imputation will be used in order to preserve data responses as much as possible. Data will be analyzed using the following software: SPSS, Excel, M-Plus, and R (open source data analysis).

Descriptive values will be calculated for all variables (means, standard deviations, minimum and maximum).

Measurement model analyzed for each scale used in the study including, reliability analyses, item analyses, exploratory and confirmatory factor analysis, item invariance analyses, and item factor loading.

Sample size is estimated at 500 based on the number of observed variables and intended analyses. Where significance testing is used, *p* = .05 will be used to interpret results.

This descriptive study examines relationships between variables. We will use Pearson correlation coefficients, and structure equation modeling to estimate those relationships.

**8.0 Data management & privacy/confidentiality**

Date are collected via an online survey that involves no personally identifying information from participants. There are no hardcopies of the data. Electronic data will be stored on Baylor computers that are protected through passwords and dual authentication.

Data will involve no identifying information and will be available for analytic verification according to the standards of open science research. For instance, some journals require or recommend data availability for analytic verification of the results. Destruction of this type of data is contrary to scientific recommendations in our field. Again, there is no personal identifying element in any of the data. It will not be possible to link the data to any individuals.

If data are shared for verification or used in subsequent analyses, not identifying data will be in the dataset, and no participant could be identified in the process of data transparency or sharing.

Though there is no intent to destroy the data, if there is a destruction of the data it would not occur in less than three years from the completion of the study according to Baylor data management protocols. There will be no hardcopy or physical data, only electronic files with no identifying information.

**9.0 data & safety monitoring**

The contact information (email and phone number) of the PI will be available in the recruitment and consent elements of the study. Potential problems are unlikely, but in the event they occur, the will handled by the PI who has vast experience in this type of data collection and analysis.

Any deviations from the approved study plan and procedures will be reported to the Baylor University Office of the Vice-Provost for Research.

The research proposal poses minimal risk using no physical contact and an online survey that can be completed in approximately 10-15 minutes. Moreover, data collected involved broad demographics and no personally identifying information.

**10.0 References**

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Oreg, S. (2006). Personality, context, and resistance to organizational change. *European Journal of Work and Organizational Psychology, 15*(1), 73-101.

Sackett, P. R. (2020). Reflections on a career studying individual differences in the workplace. *Annual Review of Organizational Psychology and Organizational Behavior.* Advanced Online Publication.

**ITEMS FOR THE SURVEY**

The following pages include:

* Demographic Items
* Five Factor Model of Personality Items w/aspects
* Teacher Self-Efficacy Scale
* Teacher Team Innovativeness Scale
* Resistance to Change Scale
* Perceptions of Online Learning Scale

**Demographic Items**

Demographics:

* Age
* Years of teaching experience
* Sex
* Your students are:
* Elementary
* Middle School
* High School
* other
* Primary teaching area
* STEM (science, technology, engineering, and mathematics)
* non-STEM
* I have participated *as a student* in one or more online classes. (yes/no)
* Are you currently teaching online (yes/no)
* Have you previously taught online? (yes/no)
* When I teach online, it is …
* Synchronous
* Asynchronous
* Both synchronous and asynchronous
* Preparation for teaching online should take more/less time than preparing for in-person courses. (strongly disagree, disagree, agree, strongly agree)
* I enjoy online teaching as much as in-person teaching. (strongly disagree, disagree, agree, strongly agree)

Technology Support (strongly disagree, disagree, agree, strongly agree)

* I have the equipment I need (computer, microphone, camera, etc.) for online learning.
* I have the technical support I need to facilitate online learning.
* I received useful training prior to engaging in online instruction.
* I have a dedicated space available (whether at home or at an office) to use when teaching online.
* I have peers/coworkers with whom I can discuss any challenges of online learning.

Personal/Social Use of Technology (strongly disagree, disagree, agree, strongly agree)

* I regularly engage on a social media platform such as Facebook, Twitter, or Instagram.
* I use text messaging regularly for personal communication.
* I use email regularly for personal communication.
* I have at least one person with whom I regularly communicate through video calls for *social* reasons (Facetime, Skype, etc).
* I feel comfortable using the Internet.

**Five Factor Model of Personality with Ten Aspects**

DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the big five. *Journal of Personality and Social Psychology, 93*(5), 880-896. <https://doi.org/10.1037/0022-3514.93.5.880>

**How Accurately Can You Describe Yourself?**

|  |
| --- |
| Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you. |

**Neuroticism**

*Volatility*

Get angry easily

Rarely get irritated (Reverse)

Get upset easily

Keep my emotions under control (Reverse)

Change my mood a lot

Rarely lose my composure (Reverse)

Am a person whose moods go up and down easily

Am not easily annoyed (Reverse)

Get easily agitated

Can be stirred up easily

*Withdrawal*

Seldom feel blue (Reverse)

Am filled with doubts and things

Feel comfortable with myself (Reverse)

Feel threatened easily

Rarely feel depressed (Reverse)

Worry about things

Am easily discouraged

Am not embarrassed easily (Reverse)

Become overwhelmed by events

Am afraid of many things

**Agreeableness**

*Compassion*

Am not interested in other people’s problems (Reverse)

Feel others’ emotions.

Inquire about others’ well-being

Can’t be bothered with other’s needs (Reverse)

Sympathize with others’ feelings

Am indifferent to the feelings of others (Reverse)

Take no time for others (Reverse)

Take an interest in other people’s lives

Don’t have a soft side (Reverse)

Like to do things for others

*Politeness*

Respect authority

Insult people (Reverse)

Hate to seem pushy

Believe that I am better than others (Reverse)

Avoid imposing my will on others

Rarely put people under pressure

Take advantage of others (Reverse)

Seek conflict (Reverse)

Love a good fight (Reverse)

Am out for my own personal gain(Reverse)

**Conscientiousness**

*Industriousness*

Carry out my plans

Waste my time (Reverse)

Find it difficult to get down to work (Reverse)

Mess things up (Reverse)

Finish what I start

Don’t put my mind on the task at hand (Reverse)

Get things done quickly

Always know what I am doing

Postpone decisions (Reverse)

Am easily distracted (Reverse)

*Orderliness*

Leave my belongings around (Reverse)

Like order

Keep things tidy

Follow a schedule

Am not bothered by messy people (Reverse)

Want everything to be “just right”

Am not bothered by disorder (Reverse)

Dislike routine (Reverse)

See that rules are observed

Want every detail taken care of

**Extroversion**

*Enthusiasm*

Make friends easily

Am hard to get to know (Reverse)

Keep others at a distance (Reverse)

Reveal little about myself (Reverse)

Warm up quickly to others

Rarely get caught up in the excitement (Reverse)

Am not a very enthusiastic person (Reverse)

Show my feelings when I’m happy

Have a lot of fun

Laugh a lot

*Assertiveness*

Take charge

Have a strong personality

Lack the talent for influencing people (Reverse)

Know how to captivate people

Wait for others to lead the way (Reverse)

See myself as a good leader

Can talk others into doing things

Hold back my opinions (Reverse)

Am the first to act

Do not have an assertive personality (Reverse)

**Openness/Intellect**

*Intellect*

Am quick to understand things

Have difficulty understanding abstract ideas (Reverse)

Can handle a lot of information

Like to solve complex problems

Avoid philosophical discussion (Reverse)

Avoid difficult reading material (Reverse)

Have a rich vocabulary

Think quickly

Learn things slowly (Reverse)

Formulate ideas clearly

*Openness*

Enjoy the beauty of nature

Believe in the importance of art

Love to reflect on things

Get deeply immersed in music

Do not like poetry (Reverse)

See beauty in things others might not notice

Need a creative outlet

Seldom get lost in thought (Reverse)

Seldom daydream (Reverse)

Seldom notice the emotional aspects of paintings and pictures (Reverse)

**Teacher Self-Efficacy Scales**

Originally used in TALIS (The Teaching and Learning International Survey)

Organisation for Economic Co-operation and Development (OECD). (2019). TALIS 2018 technical report. <https://www.oecd.org/education/talis/TALIS_2018_Technical_Report.pdf>

In your teaching practice, to what extent can you do the following?

1 = not at all

2 = to some extent

3 = quite a bit

4 = a lot

Self-Efficacy in Classroom Management (Omega = .845)

* Control disruptive behavior in the classroom
* Make my expectations about student behavior clear
* Get students to follow classroom rules
* Calm a student who is disruptive or noisy

Self-Efficacy in Classroom Instruction (Omega = .821)

* Craft good questions for students.
* Use a variety of assessment techniques
* Provide an alternative explanation, for example when students are confused
* Vary instructional strategies in my classroom

Self-Efficacy in Student Engagement (Omega = .801)

* Get students to believe they can do well in school work
* Help students value learning
* Motivate students who show low interest in school work
* Help students think critically

Stratified Cronbach’s Alpha = .911

Model Fit Indices for Self-Efficacy in Classroom Management

CFI = 0.993

TLI = 0.958

RMSEA = 0.056

SRMR = 0.013

Model Fit Indices for Self-Efficacy in Instruction

CFI = .902

TLI = .706

RMSEA = 0.141

SRMR = 0.028

Model Fit Indices for Self-Efficacy in Student Engagement

CFI = 1.000

TLI = 1.000

RMSEA = 0.000

SRMR = 0.003

All three subscales indicated Invariance at the Metric Level

**Teacher Team Innovativeness Scale**

Originally used in TALIS (The Teaching and Learning International Survey)

Organisation for Economic Co-operation and Development (OECD). (2019). TALIS 2018 technical report. <https://www.oecd.org/education/talis/TALIS_2018_Technical_Report.pdf>

Thinking about the teachers in this school, how strongly do you agree or disagree with the following statements?

1 = Strongly Disagree

2 = Disagree

3 = Agree

4 = Strongly Agree

* Most teachers in this school strive to develop new ideas for teaching and learning.
* Most teachers in this school are open to change.
* Most teachers in this school search for new ways to solve problems.
* Most teachers in this school provide practical support for each other for the application of new ideas.

Omega Coefficient = .889

Model Fit Indices for Teacher Team Innovativeness

CFI = 1.000

TLI = 1.004

RMSEA = 0.000

SRMR = 0.006

Teacher Team Innovativeness Scale indicated Invariance at the Scalar Level

**Resistance to Change Scale**

Oreg, S. (2003). Resistance to change: Developing an individual differences measure. *Journal of Applied Psychology, 88*(4), 680-693. <https://doi.org/10.1037/0021-9010.88.4.680>

Four Factor Scale (17 items)

*Listed below are several statements regarding one's general beliefs and attitudes towards change. Please indicate the degree to which you agree or disagree with each statement by circling the appropriate number on the scale next to it.*

Six-Point Likert Scale

1 Strongly Disagree

2 Disagree

3 Inclined to Disagree

4 Inclined to Agree

5 Agree

6 Strongly Agree

*Routine Seeking*

I generally consider changes to be a negative thing.

I’ll take a routine day over a day full of unexpected events any time.

I like to do the same old things rather than try new and different ones.

Whenever my life forms a stable routine, I look for ways to change it.

I’d rather be bored than surprised.

*Emotional Reaction*

If I were to be informed that there’s going to be a significant change regarding the way things are done at work, I would probably feel stressed.

When I am informed of a change in plans, I tense up a bit.

When things don’t go according to plans, it stresses me out.

If my boss changed the criteria for evaluating employees, it would probably make me feel uncomfortable even if I thought I’d do just as well without having to do any extra work.

*Short-Term Thinking*

Changing plans seems like a real hassle to me.

Often, I feel a bit uncomfortable even about changes that may potentially improve my life.

When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.

I sometimes find myself avoiding changes that I know will be good for me.

*Cognitive Rigidity*

I often change my mind.

Once I’ve come to a conclusion, I’m not likely to change my mind.

I don’t change my mind easily.

My views are very consistent over time.

**Perceptions of Online Learning Scale**

For each of the following items, rate your perceptions about online or blended learning compared to traditional learning environments.

(1) Definitely less than traditional learning environments

(2) Somewhat less than traditional learning environments

(3) About the same as traditional learning environments

(4) Somewhat more than traditional learning environments

(5) Definitely more than traditional learning environments

**Effective Learning**

Online learning allows students to acquire content knowledge.

Online learning allows students to develop conceptual understanding.

Online learning is effective for learning about the topics of the curriculum

Online learning is effective for building knowledge and understanding

Online learning supports student achievement

Online learning provides effective learning resources

Online learning supports achievement with multi-media content

Online learning prepares students for high-stakes assessments

Online learning prepares students for work and future education

Online learning accomplishes the goals of the curriculum

Online learning promotes higher-order thinking skills such as analysis, synthesis, and evaluation

Online learning builds student social skills

Online learning includes focused assessment and feedback

Online learning effectively assesses student performance

Online learning assessments provide teachers with reliable information on student progress

Online learning encourages academic integrity and adherence to intellectual property standards

**Student Centered**

Online learning is student-centered.

Online learning offers students’ choices

Online learning allows for differentiation based on student needs

Online learning is responsive to students

Online learning supports flexible pacing for students

Online learning supports learner-customized pacing

Online learning aligns instruction to individual learning goals.

Online learning is culturally responsive

Online learning encourages diverse student perspectives

Online learning is personalized and adaptive

**Interactive**

Online learning supports student-to-student interaction

Online learning allows students to collaborate on learning tasks

Online learning encourages student-to-student discussions

Online learning provides a space for students to work in teams

Online learning allows one-on-one student interaction with the teacher

Online learning builds community among students

Online learning encourages academic dialogue

Online learning is collaborative

Online learning requires active participation

Online learning enables teachers to respond timely

**Engaging**

Online learning engages students in meaningful ways.

Online learning connects learning to real world situations

Online leaning builds self-directed learning skills

Online learning supports project-based learning

Online learning supports creative thinking and innovation

Online learning engages student autonomy and self-directed learning.

Online learning helps students transfer learning to novel situations

Online learning is interesting

Online learning motivates students to learn

Online learning makes content applicable to real-world contexts

Online learning builds time management skills

Online learning requires time commitment from students

Online learning requires time commitment from teachers