# Measuring Technology Acceptance in K-12 Educators:

**Adapting an Instrument**

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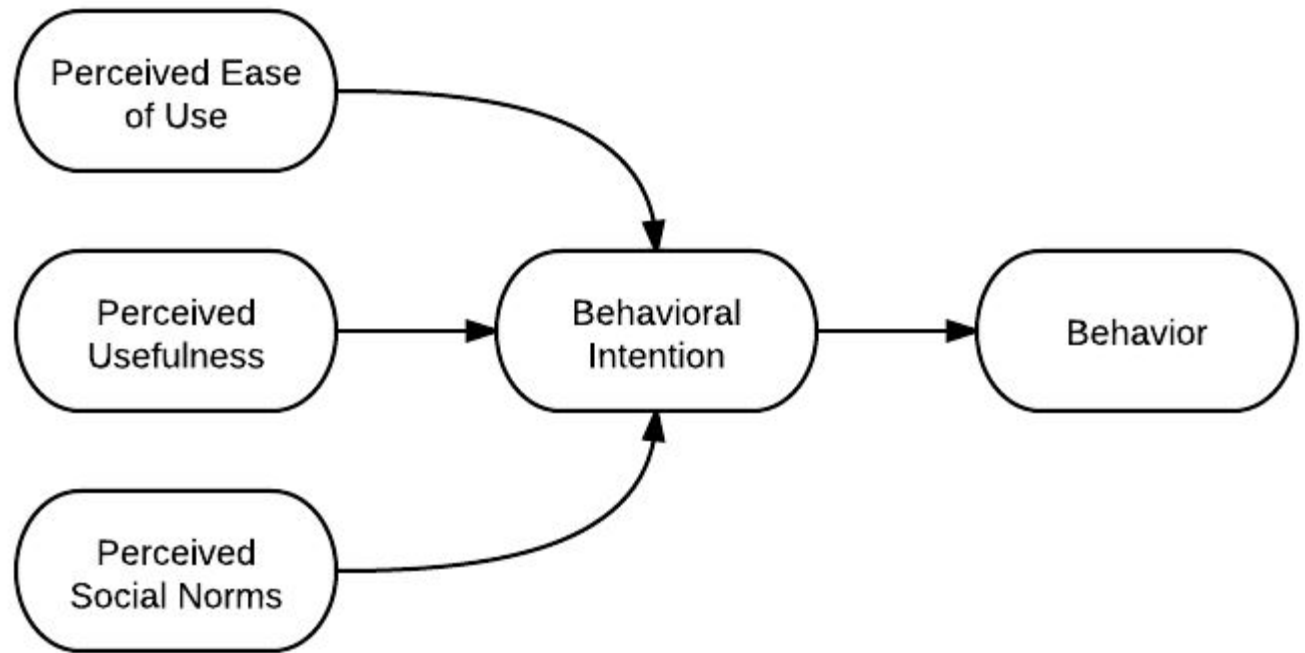http://www.hackscience.net
(paper & this presentation linked there)

# Introduction

1) Technology Acceptance Model

(Davis, 1989)

- History

- Applications



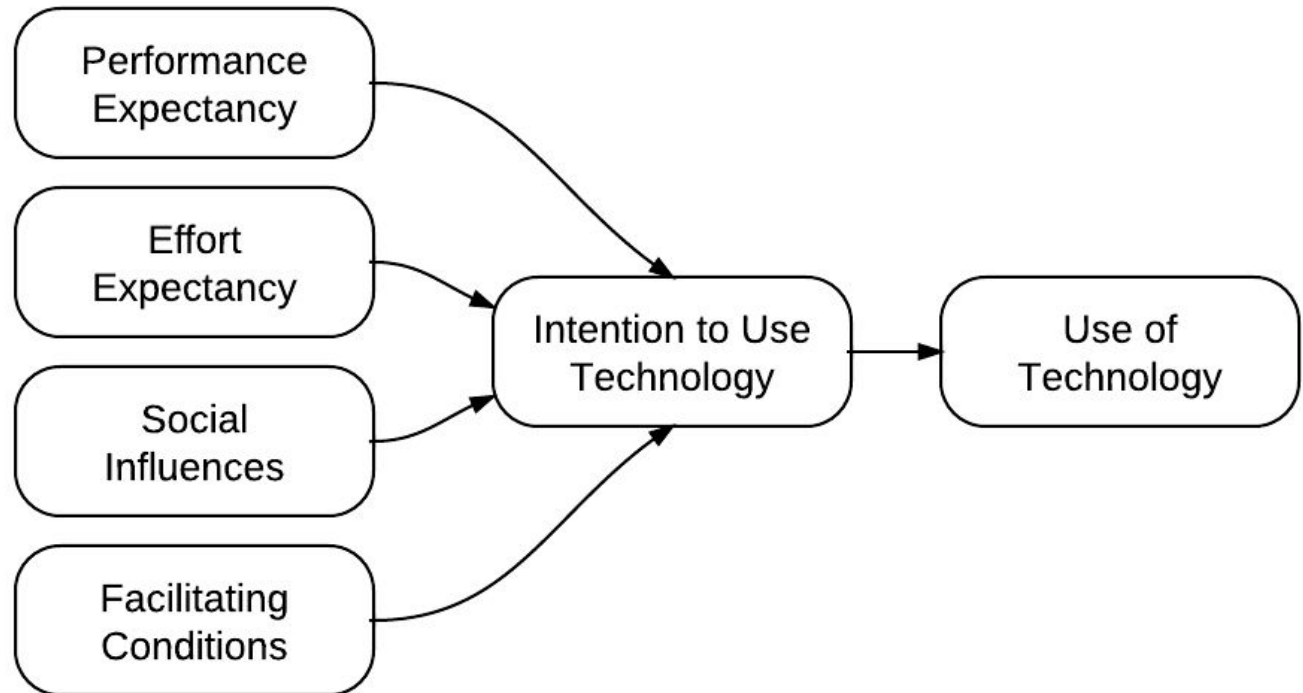2) Lack of "TAM" in K-12 Despite Instrument for Adolescent & Pre-Service Teachers

(Teo & Noyes, 2008; Teo & Noyes, 2010)

# Introduction

## Unified Acceptance of Technology and Use of Technology (UTAUT)

(Venkatech, Morris, Davis, & Davis, 2003)

TAM
TRA
TPB
& 5 others



## Indirect

Age, Gender, Experience, Voluntariness of Use

# Purpose

Determine Internal Consistency Reliability
of Modified Instrument
(Cronbach's Alpha)

| Instrument (Venkatech, Morris, Davis, & Davis (2003) | Instrument (Ackerman, 2011) |
|---|---|
| "Business Language" | "Education Language" |
| Administered via Hardcopy | Administered via Web |
| PE (4 Items) | PE (4 Items) |
| EE (4 Items) | EE (4 Items) |
| SI (4 Items) | SI (4 Items) |
| FC (4 Items) | FC (4 Items) |

# The Instrument

Pilot with five individuals…
- test compilation formulas
- update per their recommendations

Pilot group questioned language that appears to replace speed and quality with quality and effectiveness...

| PE Items (Venkatech, Morris, Davis, & Davis (2003) | PE Items (Ackerman, 2011) |
|---|---|
| I would find the system useful in my job. | I find the system useful in my job. |
| Using the system **enables me to accomplish tasks more quickly.** | Using the system **improves the quality of my teaching.** |
| Using the system increases my productivity. | Using the system increases my productivity. |
| If I use the system, I will increase **my chances of getting a raise.** | If I use the system, I increase **the effectiveness in the classroom.** |

# The Population

| Characteristic | Description |
|---|---|
| Selection | Convenience |
| Size | ~ 250 (licensed and unlicensed educators) |
| Location | Rural Vermont |
| Recruitment | Email |

- no demographics of population or sample were gathered
- four small schools associated through common administration
- participation was voluntary and anonymous

# Results

| Variable | Valid N | Cronbach's Alpha |
|---|---|---|
| Performance Expectancy | 34 | .92 |
| Effort Expectancy | 38 | .81 |
| Social Influences | 35 | .74 |
| Facilitating Conditions | 32 | .69 |

- 40 individuals completed some items
- valid N = all items for a factor completed

# Discussion

| Variable | Valid N | Cronbach's Alpha | Internal Consistency |
|---|---|---|---|
| Performance Expectancy | 34 | .92 | α > .9– excellent |
| Effort Expectancy | 38 | .81 | .9 > α > .8 – good |
| Social Influences | 35 | .74 | .8 > α > .7 – acceptable |
| Facilitating Conditions | 32 | .69 | .7 > α > .6 – questionable |

Questions about the effects of leadership changes within the community affecting facilitating condition.

# Conclusion

1) Instrument appears internally consistent
    - verify with larger and more diverse populations
    - questions remain regarding facilitating conditions
    - question regarding definitions of performance expectancy

2) Triangulate with other tools/ observations to validate in K-12

3) TAM/ UTAUT appears to be validated with K-12 populations
    - the "TAM" for education
    - findings from other fields applied to K-12

Appendix includes complete text of the items...

# Text of items

I find the system useful in my job.

Using the system improves the quality of my teaching.

Using the system increases my productivity.

If I use ICT, I will increase my effectiveness in the classroom.

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I find it easy to get ICT to do what I want it to.

Learning to do new things with the system is easy for me.

Teaching with ICT is so complicated, it is difficult to understand what is going on.

It is easy for me to get the system to do what I want.

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People who influence me think I should use ICT in my classroom.

People who are important to me think I should use ICT in my classroom.

School administrators have been helpful in the use of the system.

In general, the school has supported the use of the system.

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The system I have for teaching is compatible with other systems I use.

I have the resources necessary to use the system.

I have the knowledge necessary to use the system.

A specific person is available for assistance with difficulties.

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I intend to teach with the system in the next month.

# References

Ackerman, G. (2011). *Unified theory of acceptance and use of technology.* Retrieved from
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