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Managing Change to Impact Training and Affect the Experience of Physicians Using Speech Recognition Technology

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Comprehensive Exam Presentation

Managing Change to Impact Training and Affect the Experience of
Physicians Using Speech Recognition Technology

Rick Fricker and Tom Endrizzi

Organizational Leadership Master's Program

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Introduction

- Expanded health information technology (HIT)
- Increased electronic health record (EHR) use, increased physician burnout
- Speech recognition technology (SRT) presents efficiency opportunities
- Training a factor in SRT adoption
- Understanding physician perceptions creates opportunities



Purpose of the Study/Problem Statement

To better understand and contribute to the research in the following areas:

- Impact of training method (online versus in-person) on use of speech recognition technology (SRT)
- Affect of training and support resources on the experience of physicians using speech recognition technology (SRT)

Research Questions

The following questions guided this study:

Primary Research Questions:

- **RQ 1.** How does user training (online and in-person) impact the use of speech technology?
- **RQ 2.** How do dedicated training and support resources affect the experience of the physician utilizing SRT?



Research Methodology & Rationale

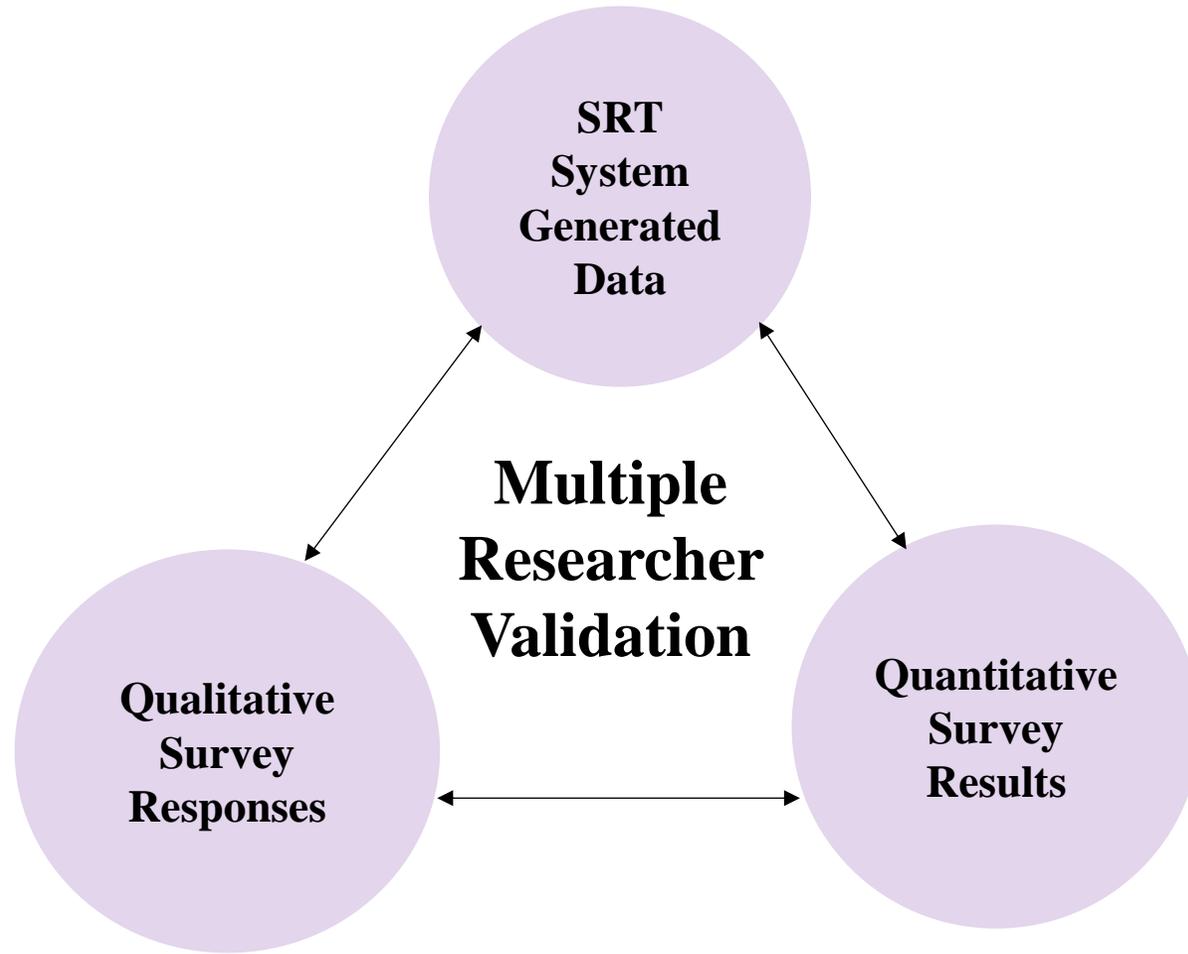
Design

- Mixed Method Explanatory Sequential Design (Lochmiller & Lester, 2017)

Rationale

- Conscientious approach utilizing both quantitative and qualitative provides greater understanding
- The Explanatory Sequential Design allows quantitative data to inform qualitative information
- Anonymous quantitative and qualitative survey questions utilized.

Triangulation





Participant Profiles

- Consulting staff physicians from a large hospital/clinic system in the Midwest
- Trained on SRT before July 2019, utilize an average of ten or more minutes per month from July 2019 through December 2019
- Purposive and random sampling
- 180 survey participants – 100 in-person trained, 80 eLearning trained

Research Question 1 Findings

RQ1: How does user training (online and in-person) impact the use of speech technology?

Data Collection Method:

Quantitative Survey

Data Analysis Method:

Inferential Statistical Method Two Sample T-Test

- No statistical relevance in difference between on-line and in-person training
- High % (40+) perception SRT was difficult to use regardless of training method
- Higher upper end volume production by those trained in-person

Research Question 2 Findings

RQ2: How do dedicated training and support resources affect the experience of the physician utilizing SRT?

Theme: System Performance

Data Collection Method:

Qualitative Survey

Data Analysis Method:

Qualitative Thematic Analysis

- System Performance – General dissatisfaction expressed more than any other response and appears to affect the experience more than training and/or support issues combined. (47 out of 104 comments)
 - “The problem is not with training; the problem is that the dictation is simply not accurate enough to save time as editing is so time consuming.”
 - “The performance of this product is still subpar. The error rate continues to be 1 per sentence.”
 - “It needs to be way better at word recognition. I have so many typos.”
 - “It is not a matter of training me... It is slow, no longer improving and actually an impediment to efficiency for me. It is inaccurate.”

Research Question 2 Findings Cont'd

RQ2: How do dedicated training and support resources affect the experience of the physician utilizing SRT?

Theme: Communication

Data Collection Method:

Qualitative Survey

Data Analysis Method:

Qualitative Thematic Analysis

- Communication – Comments about existing training and support offerings highlights a potential gap in communication and information distribution/availability. (27 out of 104 comments)
 - “Identify trainers or experts in Fluency Direct who can answer questions and provide tutorials in the use of this application.”
 - “I would like to have easy access to support person for Fluency Direct”
 - “I need more training now that I have been using it, to make me more efficient.”
 - “One on one sessions to assist with maximizing use.”

Findings Linked to Research

Findings	Research
<p>No statistical difference between in-person and eLearning training but higher-end volume production did trend toward those trained in person</p>	<ul style="list-style-type: none"> • Research does not specify which training method is most effective (Smith, 2017). • eLearning offers varying levels of participation; lacks in-person interaction with instructor (Kaupins, 2002). • Active participation is best for adult learners (Keyes, 1990).
<p>TAM may not be the best model for this population and/or technology due to high usage and also low ease of use rating</p>	<p>Technology Acceptance Model – $PEU \times PU = AU$ (multiple iterations of TAM have been developed) (Davis, 1989)</p>
<p>Even though there is a higher than expected perception that the software is difficult to use, actual use continues to be high</p>	<p>Change management and project planning increase the likelihood of project/implementation success (Dvir, Raz, & Shenhar, 2003)</p>

Findings Linked to Research Cont'd

Findings	Research
<p>There seems to be a information barrier somewhere in the training and support process; e.g., services offered, how to engage with trainers and support</p>	<ul style="list-style-type: none"> • Successful adoption of SRT requires open-ended involvement of all parties (Kauppinen, Kaipio, & Koivikko, 2013). • When a user's needs are not met appropriately, acceptance and adoption are at risk to both technologies (Clarke, King, & Kim, 2015).
<p>Most frustration from users comes from the product itself</p>	<ul style="list-style-type: none"> • Successful implementation and adoption of SRT is based heavily on experience with the technology, training, and /or technical or practical influences. Inadequate/no training has led to the abandonment of SRT altogether (Hoyt & Yoshihashi, 2010). • Training and education are critical to SRT usage and inadequate or insufficient training is linked directly to performance issues with utilization of the technology (Clarke, et. al, 2015).

Recommendations

- Replicate the survey to include other sites in the organization to better understand cultural, leadership, and operational differences from site to site
- Modify communication plan to better accommodate a wider mode and greater frequency of information to providers
- Expand training program to allow for the increased initial eLearning training with more rigorous follow-up and support
- Develop survey strategy to regularly assess perception of training, support and system issues
- Conduct additional research to better understand the low rate of “ease of use” with SRT technology

Implications – Leadership Core

Core Course

Leadership Implications

Systems Thinking

- Every system is comprised of any number of interconnected parts that all affect each other in obvious and less obvious ways. Furthermore, a rigorous and thoughtful approach to understand any system will yield greater appreciation to the cause and effect relationships that exist within that system and the systems which it interacts with

Change Leadership

- Provides an understanding of the various leadership approaches, their benefits and drawbacks and that no one method is right in every situation and/or circumstance. Awareness and development of one's own style is critical in any successful leadership journey

Communications

- Clear, concise, and appropriate communication at every step is critical. Understanding the needs and perspectives of all stakeholder groups should help inform and drive all communications and communication strategies.

Implications – Org Leadership Core

Core Course

Leadership Implications

Appreciative Inquiry

- Awareness that building on the positive aspects, as opposed to focus on the negative, can have a profound affect on the results of any effort

Leadership and Technology

- Leadership plays a vital role in the management, implementation and understanding of technology, its place within the organization, and its ability to transform approach, process and function in order to maximize effort and resources

Managing Change, Innovation and Transition

- Change comes in many shapes and sizes and can progress at a variety of speeds. The change is influenced by both internal and external environments and requires a strategy that understands the complexity associated within to successfully implement the changes desired.

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