# TESR: Technology Enhanced Relearning

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***Abstract*—This paper summarizes three presentations in a session of the track "TESR: Technology Enhanced Relearning". The research work deals with the following key issues of this track:**

- **Medical caregiver's assessment of technology-enhanced system**
- **Position paper on Internet of medical things for independent living and re-learning**
- **The professionals' learnings on corona adapted solutions for TES**

**These publications show that the contributions in this track address research questions that are of high importance in the field of technology-enhanced systems for re-learning, both focusing on the professionals' learning as well as the design of the systems.**

***Keywords-technology-enhanced systems; relearning; speech rehabilitation; internet of medical things; corona adapted technology-enhanced systems.***

## I. INTRODUCTION

The global population is increasing significantly, hence the number of adults requiring long-term medical care is also increasing. More medical and social services will soon be needed, designed to support adults with chronic diseases. Traditional relearning systems require a large number of clinical staff and are difficult to deploy because of high running costs. One solution is the design of Technology Enhanced Systems (TES), which have been recognized as highly useful for several treatment types when the TES are based on relearning approaches focused on adults with chronic diseases. Some TES have been repurposed learning systems designed for children; these are typically less useful. Effective approaches cannot be based on learning principles for children but must be based on andragogy (adult learning theory), which can be refocused for relearning and training. Indeed, several relearning systems have been successfully developed using modern technologies. Recent studies highlight those different types of TES can be useful for relearning, combining various categories of technologies, such as tele-relearning based on audio and videoconferencing, Internet-based therapy, serious game-based therapy and Virtual Reality based therapy. Recent research studies have found that most adults prefer to rehabilitate in place, and that policymakers similarly favor this idea, but also that contextual and psychosocial factors must be carefully explored if TES can result in a beneficial impact. Therefore, the following submissions focus on new findings on TES developed to serve for relearning.

## II. SUBMISSIONS

The first paper is about "Technology Acceptance of an Online Speech and Language Assessment Application for Stroke Patients - the Medical Caregivers' Viewpoints" [1]. Although several advanced and modern tools are available in the health sector, the acceptance and usability of these tools and technologies are uncertain, and more research is needed in this area. UTAUT model has been widely used in research to evaluate the usefulness and adoption of technology. This study accessed and evaluated the technology acceptances of an eHealth application(A-ning) by using the UTAUT as a theoretical model.

Stroke is a globally increasing disease, and speech and language deficiencies are common in stroke survivors. Technology can play an essential role in facilitating medical caregivers' professional work and improving patients' quality of life. The study evaluated the technology acceptance and adoption of an online speech and language assessment application. An evaluation focused Design Science Research strategy was adopted for that purpose. Two physiotherapists, one occupational therapist and three speech therapists participated in the study. Findings show that the suggested application is useful and easy to use; however, it should be more synchronized with speech therapists' daily work routines. Due to the impairments after stroke, the patients have some specific preferences for software and hardware, such as a tablet with a touch pen is the preferred hardware. The user's privacy and security, the patient's current health, and previous knowledge and experience about technology were also essential determinants for intention to use the given technology.

The second paper, named" Internet of medical things for independent living and relearning" [2], is a position paper. The fundamental position is that the Internet of medical things (IoMT) can be a foundation for independent living for older adults and increase relearning possibilities. Using sensors is the paradigm shift for transforming conventional healthcare practices into the intelligent, self-assisted healthcare practices envisioned for today's medical world. IoT and IoMT are inter-related technologies for promoting independent living and relearning practices. In this paper, relearning is defined as the process for adults to recover useful instrumental activities of daily living skills lost after an impairment.

The third paper, “A Transition Towards Digital Home Visits in Social Care and Home Health Care during the Corona Pandemic” [3], has its base in the regulation that physical meetings were supposed to decrease as much as possible to avoid spreading the virus. Before the pandemic, the physical meeting favoured social care and home health care in Sweden. One solution was to digitize as many of these meetings as possible. Therefore, the study investigated this transition in a web survey, including questions with predetermined and open-ended answers. The web survey was sent to co-workers in-home health care and social care in a middle-seized municipality in Sweden. The results showed that not all meetings could be transformed, like meetings with hearing or cognitively impaired citizens. Challenges related to the transformation were instability in technical equipment, the professionals’ and citizens’ knowledge of handling technical equipment, and access to technical equipment support. Despite this did the co-workers digitize meetings whenever possible, adding operational and problem-solving attitude to the transformation.

## III. Conclusion

The presented articles show an interesting variation in the field of technology-enhanced re-learning. The opinion is that it is due to the widespread use of both technology- enhanced systems; and how they can be used. The results indicate a large contemporary need for technology-enhanced systems, but at the same time that there are several problems related to the usage of technology. Therefore, the challenge for the research community is to detail research. This research should better include various stakeholders, various technology components, and also investigate the impact of further development.


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## References


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