

Title	学習者の感受性と動画提示手法の対応関係の調査
Author(s)	リーゼ, ショーン未来
Citation	
Issue Date	2024-03
Type	Thesis or Dissertation
Text version	author
URL	<a href="http://hdl.handle.net/10119/18968">http://hdl.handle.net/10119/18968</a>
Rights	
Description	Supervisor: 長谷川 忍, 先端科学技術研究科, 修士(知識科学)

## Abstract

The purpose of this research is to propose a distance learning support method that focuses on individual differences in the sensitivity of learners who have the characteristics of Highly Sensitive Persons (HSPs). In order to achieve this goal, we have conducted a survey of learning challenges associated with high level of sensitivity.

The background of this study is that distance lectures have been implemented in almost all higher education institutions in Japan from 2020, in line with the global expansion of Covid-19. It has been reported that distance lectures reduce learners' motivation due to reasons such as not being able to attend face-to-face classes at universities. In this new social situation, it has been pointed out that learners with HSP characteristics such as "deep thinking," "sensitive to stimuli," "highly sensitive and empathetic," and "keen in all senses" are facing serious challenges due to their sensitivity to the environment and things.

HSP is not a disease but an innate trait, and it is not a trait that only works negatively. However, in recent years, the expression HSP has tended to transcend academic definitions and be labeled as a variety of difficult-to-live-with experiences. In addition, the fact that HSP is not a disorder or disease means that cases that actually require support are not reaching society. Thus, it is significant to try to support learners with HSP characteristics who have not been adequately targeted for learning support due to a kind of label.

This study aims to propose a method to support distance learning by focusing on the individual differences in sensitivity of learners. Based on the hypothesis that external stimuli can be controlled by replacing the opponent's video in distance lectures, we address the following research questions.

RQ1: Is there an individual difference in learner sensitivity?

RQ2: Is there a difference in the effects of different video presentations?

RQ3: How can we control external stimuli in a distance learning environment?

This study is unique in that there is very limited research on learning support for learners with HSP characteristics. While there have been various previous studies on learning support for learners with specific disabilities and disorders, there are no studies on HSP, which is a relatively new concept and has not yet been recognized by society, although various issues have been raised. In this study, we focus on "sensitivity" among HSPs, and aim to provide support for solving issues in distance learning.

The importance of this study is that HSP is said to be a "disposition" that statistically applies to 15% to 20% of the population. Thus, it is thought that there are a certain number of learners with HSP characteristics, and that it is socially important to support them.

It is known that there are individual differences in sensitivity, one of the characteristics of HSP, such as learners who are highly sensitive to communication and easily feel pain, and learners who are less sensitive and seek stronger stimuli.

To answer RQ1, we analyzed the results of responses to the HSPS-J19, a self-assessment tool for sensitivity, from 10 male and 10 female adults. The results showed that the sensitivity scores followed a normal distribution. Although statistical tests and the effects of the three factors included in the HSPS-J19 need to be analyzed in the future, individual differences in sensitivity could be observed in this survey.

To answer RQ2, we created four videos explaining the SDGs using no avatar, a normal

avatar, a realistic avatar, and an abstract avatar, and analyzed the results of the test and the post-questionnaire to see if there were differences in the effects of the video presentations. As a result, we found a correlation between the HSPS-J19 score and Q2 (whether the avatar's appearance changed the impression of the video) and Q5 (whether the avatars increased motivation), indicating the possibility of improving the learning effect if we can provide a pleasant avatar that the participants like. There is room to consider whether the avatars created in this study were appropriate. First, the quality of the avatar superimposition was low, and there was insufficient synchronization between the avatar and the person, as well as insufficient eye gaze and lip-sync. Furthermore, the avatars used were not highly rated, so it is necessary to set up avatars that better match learner preferences.

Based on the results of these analyses, we proposed a system that can control external stimuli in distance lectures by superimposing avatars on the video images of the others for RQ3. The proposed system allows the learner to select the avatar superimposition and the avatar of his/her choice to participate in the learning. We expect that this type of avatar superimposition will have an enhancing effect.