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Learners' Need for Including Teachers' Moving Images in Online Learning Video Materials

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Abstract: Typical online learning video materials include teachers' moving images along with their voices and visual slides. My past study from the perspective of cognitive science revealed that learners watch teachers' moving images although they apparently distract learners' attention from the essential contents of the slides. This study investigated learners' subjective need for teachers' moving images in online video materials. University students (N = 87) answered four questionnaire items on a five-point scale after taking online video lessons as course requirements. The results showed that about half the students (52%) felt positively about including teachers' moving images. On the other hand, only 11% students negatively evaluated their inclusion; the remaining students (37%) held a neutral opinion. These results suggest that learners subjectively require teachers' moving images when learning with online video materials. The result is interpreted, with my data from past studies and theories, to mean that human learning is intrinsically not information-to-learner communication but teacher-to-learner, or human-to-human, communication.

Keywords: video materials, teachers' image, cognitive science, MOOCs

1. Introduction

Typical online learning video materials such as MOOCs (massive open online courses) often include teachers' moving images along with learning contents such as lectures and visual slides. From the perspective of cognitive science, although teachers' images apparently distract learners' attention from the essential contents of the lecture, why are they included in many learning videos?

My colleague and I demonstrated that learners watch teachers' movements while learning from video materials (Kishimoto & Shimada, 2017). In this study, undergraduate students (N=12) watched three types of 4-minute video materials: moving images, still images, and no images of teachers. They were asked to watch video materials such as e-learning programs or TV programs. While watching, their eye movements were measured by the eye-tracking system. From the results of the fixation frequency in the moving image condition, the average ratio of the fixation frequency on the teacher's image to the visual slide was 23% to 77%. The ratio of fixation on the teacher's image was significantly higher than that of the still image condition (10%) (p=.004, d=1.05). Results of the total fixation time showed the same pattern. The results suggest that online learners derive some amount of information from teachers' moving images as well.

This study investigated learners' subjective need for teachers' moving images in online video materials. The results of the eye-tracking study described above indicate that learners pay attention to teachers' moving images, but it is not clear whether learners control their attention consciously or not. The conscious attention to teachers' movements is important according to the following two studies. First, in considering the learning videos as service materials, some service studies (e.g. Churchill & Surprenant, 1982) indicate that expectations, which are considered a subjective requirement, affect service satisfaction. This satisfaction can be a determinant to whether learners continue learning or not by using the materials. Second, from a theoretical perspective, there is congruity between conscious expectation and unconscious behavior. The dual-process theory (e.g. Kahneman, 2011), which is a model of human cognition, claims that the human cognitive system comprises two parts: System 1 and System 2. System 1 works unconsciously and automatically.

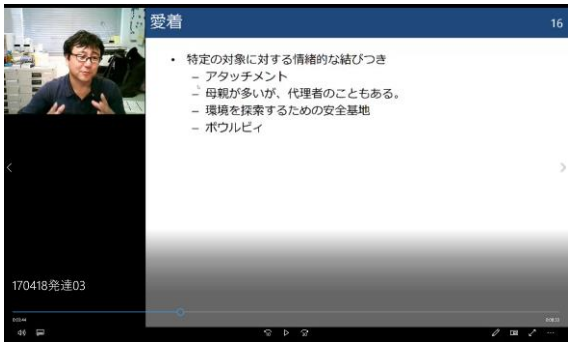

Figure 1. Captured image of the online video material.

System 2 works consciously and can be controlled. Studying the differences between the two is theoretically important to understanding the need for teachers' moving images in online learning material.

2. Materials and Methods

The participants of this study were 124 university students. They were enrolled in a teacher education program in Japan and had taken up a course on "developmental and educational psychology," which was a prerequisite for their graduation. In this course, they watched online video materials on the following four topics as a course requirement: causal attribution and motivation, development, inferential statistics, and educational assessment. The length of each video was about 60 minutes. The teacher's moving image was included as shown in Figure 1 in all the videos. The teacher in all the videos was the same person.

In the last class of the course, 109 students answered 15 questionnaire items, which included 4 items related to teachers' images, as described in Table 1. They were required to score the items on a five-point scale from "1: clearly no" to "5: clearly yes." Analysis was conducted on the responses of 87 students (Gender: male=41, female=42, unknown=4; Age M=20.1, SD=0.58).

3. Results

The results as described in Table 1 show that about half the students (52%) showed a positive evaluation of including teachers' moving images. Only 11% had a negative opinion while the remaining students (37%) held a neutral position. The mean score of the ratios is 3.61, which implies that students' response was overall positive. The results of the t-test for each score in which null hypothesis was M=3 were all significant (p<.01). Cohen's ds revealed that the effect sizes were from medium to large.

4. Discussion

These results suggest that learners subjectively require teachers' moving images when learning from online video materials. Considering the results with the data from previous studies, described in the introduction, learners probably use teachers' moving images both consciously and unconsciously to understand the material. From the perspective of service expectation, adding teachers' moving images probably enhances satisfaction level.

Of course, these suggestions should be reassessed from other viewpoints. Since this is a work-in-progress, I aim to analyze students' learning logs. In the same course of this study, the next

Table 1

Questionnaire Items and the Ratio of the Answers

	1.	2.	3.	4.	5.	Mean	*t*	*d*
I can understand the contents better with the teacher's moving image than without it	.00	.08	.30	.40	.22	3.76	7.96**	.86
My motivation to learn is enhanced with the teacher's moving image than without the image	.01	.09	.45	.28	.17	3.51	5.09**	.55
The learning material with the teacher's moving image is comprehensively better than the one without it.	.00	.10	.38	.29	.23	3.64	6.61**	.68
I can learn the material comprehensively without the teacher's moving image. (Reverse item: The score was reversed.)	.03	.10	.36	.32	.18	3.52	4.72**	.51
Mean	.01	.09	.37	.32	.20	3.61	7.03**	.76

1. clearly no, 2. no, 3. neither yes nor no, 4. yes, 5. clearly yes

**: $p<.01$

year, students can choose contents with or without the teacher's moving images. If the hypothesis that learners use teachers' moving images both consciously and unconsciously is correct, they will no doubt choose the contents with the teacher's moving images than those without it. In addition, I plan more investigation related to the theme.

One of the related issues is to examine the reason for the 11% negative response of students. In the past data, as described in the introduction, there were individual differences in participants watching the teacher's moving image; in particular, it was observed that one of the participants never watched the teacher's moving image. There is a possibility that some students do not need a teacher's image. The reason is unclear, but it could be related to the individual's attention capacity or learning style.

Finally, we need to discuss the cognitive reason for learners using teachers' moving images. The core question is, why do learners watch teachers' images although the images deflect learners' attention from the essential contents? One answer is that teachers' moving images are also essential to their learning. Natural pedagogy (Csibra & Gergely, 2009) is a theory to support the hypothesis. The theory claims that ostensive cues, which are presented by teachers or parents, like eye contact, bring children into the learning mode in which they learn effectively. From this perspective, human learning is intrinsically not information-to-learner communication but teacher-to-learner, or human-to-human, communication. Figuring out the role of teachers' moving images while watching online learning materials from a social perspective is an interesting prospect for e-learning research and should be investigated further to create more effective learning material.

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