Examination of user testing method using interaction

with agent-based prototype

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In user-centered design methods such as design thinking, during the user testing phase, it is necessary to obtain the user experience when the prototype is used in order to improve the quality of the user experience. Therefore, in order to obtain the user's thoughts and emotions, Think Aloud method is used in the field of user testing. However, this method may not be able to obtain a sufficient amount of speech due to the high cognitive load. Additionally, developer intervention to support speech may cause the user to think too much, preventing intuitive speech and the risk of not obtaining honest reactions and impressions. In this study, we propose a method of adding physical characteristics to the prototype and making it an agent to encourage honest user speech and extract more usability improvement hints. We also conducted a comparison experiment with human developer intervention.

Through the examination of usability by analyzing the results of impression evaluation, speech collection, and qualitative analysis of speech data, subjective impressions of the agent-based prototype, such as "Ease of speaking" and "Type of relationship" varied among users. In the agent condition, all users' speech increased as a result of more verbal interaction than in the human condition where the developer sat next to them. As a result, it suggests that the respondents were encouraged to mention usability and were more likely to verbalize their discomfort with the functions and operation of the application. In addition, the increase in the number of responce was due to the ability to respond regardless of the user's mood, which is considered to be an advantage unique to the Agent condition. Also, it was found that users in the Agent condition considered the responsibility for operation error to be on the interface side rather than their own operation. The content of speech also showed that users in the Agent condition expressed their frank impressions immediately, without making a logical storyline of argument or making any implication. However, users in the Agent condition tend to not speak in detail about their operation than the Human condition. Therefore, it is important to use not only the agent-based prototype, but also the developer's intervention when a more detailed explanation is needed.