Exhibit A

An Instructional Design Based Checklist for e-Learning Supporters in Higher Education

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Abstract: For those who support e-learning development in higher education (We refer to this as "e-learning supporters" in this paper.) in order to achieve efficient and effective e-learning outcomes, we present a checklist based on ID (Instructional Design) theories, especially the ARCS+AT Model, which will be the key to successful e-learning development. In our ARCS+AT model, we refer to ARCS "instructors" as e-learning supporters and ARCS "learners" as instructors planning to adopt e-learning as learners.

Keywords: ID (Instructional Design), e-Learning, the ARCS Model, the ARCS+AT Model, checklist.

I. INTRODUCTION

It is true that many Japanese universities are diligently working on activities to develop e-learning and are having difficulty in achieving efficient and effective outcomes compared to a university's own expectation. We found that it is better to focus on a person (or a section) in charge of supporting instructors and the university's e-learning development.

The role of that person is important whether or not the one is a professor or staff. The one will be able to succeed when the person has a method of checking what to do concretely and clearly to provide proper information and assistance for achieving better outcomes in e-learning. In this study, we propose a checklist for e-learning supporters based on ID theories, especially on the ARCS+AT Model, which is based on the ARCS Model[1] proposed by Dr. Keller.

II. SUGGESTING ARCS+AT CHECKLIST

The ARCS Model, which is an instructional design model based on psychological motivation, has successfully increased learners' motivation. If e-learning supporters are able to motivate both instructors and students, then they can develop e-learning consistent with the direction of the University's policy. In this case, we suppose that the four factors of Attention (A), Relevance (R), Confidence (C) and Satisfaction (S) in the ARCS Model will not be enough because the ARCS Model does not include assistance from the organization. Therefore, we added another factor, Assistance & Tools (AT), to complete it. We then created a checklist by analyzing each factor (A, R, C, S, AT) individually.

A. The Meaning of the ARCS+AT Model

In the ARCS+AT Model, developing e-learning in a class should be done with the assistance from the organization based on its policy. Also, we suggest that the ID theories will work well for planning e-learning. The "AT" features of ARCS+AT consists of three factors —tools that can be used, staff assistance that can be provided, and ID theories that can be used to improve the course.

B. Comparing two Models

We compare the two models to illustrate their differences in Table I. You can see how the ARCS+AT Model is constructed in the double structure.

TABLE I
COMPARING TWO MODELS

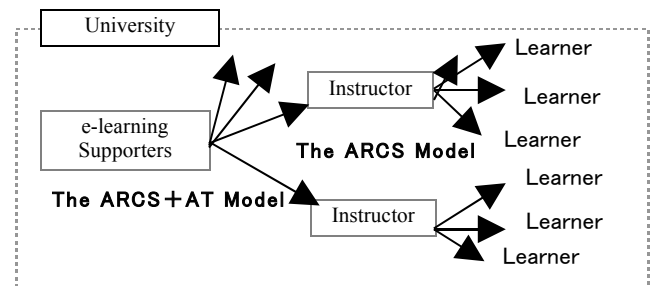|	The ARCS Model	The ARCS+AT Model
Users	Instructors will use this.	e-learning supporters will use this.
Targets	Learners will be motivated.	Instructors will be motivated.
Objective	To motivate learners to learn - To guide learners to better learning outcomes	To motivate instructors to start e-learning - To implement e-learning properly in class - To guide learners to better learning outcomes - To lead University to efficient and effective e-learning outcomes

Also, we correlate the two Models in Figure 1:

Fig. 1.Correlation of the ARCS Model & the ARCS+AT Model

C. The ARCS+AT Checklist

With such background, we started to analyze the ARCS Model Hints List (Suzuki, 2002) and worked on translating each factor to align it with the ARCS+AT Model. Then we added more detail for each factor to complete the checklist. The headlines of each factor in the results are shown in Table II.

TABLE II
THE ARCS+AT CHECKLIST

Attention: Interesting!
A-1: Perceptual Arousal
Have instructors notice that there are effective e-learning methods for class.
A-2: Inquiry Arousal
Have instructors feel that it is useful to distribute resources of his/her research or teaching to his/her learners and to think that he/she would like to use e-learning
A-3: Variability
Make explanations to instructors about the effectiveness of e-learning as simple as possible.
Relevance: I see the importance!
R-1: Familiarity
Show instructors methods of e-learning that can make his/her ideal classes a reality by talking about his/her actual classes.
R-2: Goal Orientation
Show instructors the importance of improvement by e-learning and have him/her set a goal for e-learning on his/her own.
R-3: Motive Matching
Provide the information for e-learning that fits his/her IT literacy level. Try designing the best pace for the instructor.
Assistance & Tools: It is reliable!
AT-1: Tool Information
Give information about e-learning tools or systems that instructors can use.
AT-2: Assistance Information
Give information about staff support or assistance which instructors can get regarding using e-learning.
AT-3 ID (Instructional Design) Guidance
Give information about the " know-how" of ID that makes effective e-learning become real.
Confidence: I can do it if I try!
C-1: Instruction Requirement
Share the point of completion of using e-learning concretely with the instructor.
C-2: Success Opportunities
Prepare to compare the effectiveness with and without e-learning.
C-3: Personal Control
Give the instructor the initiative also for the things related to e-learning in his/her class.
Satisfaction: I'm glad I did it!
S-1: Natural Consequences
Prepare a check sheet to give the instructor an opportunity to see how the class was improved by e-learning.
S-2: Positive Consequences
Let instructor realize the value or the importance of e-learning by the learner's outcomes.
S-3: Equity
Maintain a standard of evaluation for the effectiveness of e-learning. Keep the system of assistance to provide instructor support equally.

III. WHAT WILL HAPPEN TO THE CHECKLIST

E-learning supporters will work with an instructor on an actual class using this checklist. During this time, we will ask e-learning supporters to evaluate how effective this checklist is. We will obtain results from learner outcomes or by interviewing the instructor.

The application of this checklist ranges from designing an e-learning development plan at a university to supporting classes and evaluating how well e-learning works. The checklist may result in "providing suggestions for developing e-learning at a university" or "creating a website for instructors that provides information about using e-learning in classes."

IV. CONCLUSION

In this paper, we proposed the use of an ARCS+AT checklist for e-learning supporters. The checklist we have developed is intended to be applicable for achieving better outcomes in e-learning at any university. It has also the meaning of helping learners, instructors, e-learning supporters or even universities so that they can concentrate on teaching or learning by using ID theories and technologies as a tool.

We will continue our research with verifying psychological factors and improving the checklist. Also, we will try to measure e-learning supporters' understanding and will plan to use this checklist at universities as often as possible to improve its quality.

V. REFERENCES

[1]   Suzuki,K (2002) "Instructional Design Manual"(in Japanse), pp.176-179. (Kitaoji-Shobo,Kyoto)

[2]   Keller, J. M. & Suzuki, K. (1988) Application of the ARCS model to courseware design, in: D.H. Jonassen (Ed.) *Instructional designs for microcomputer courseware design* (New York, Lawrence Erlbaum)