The Thirteenth International Conference on Advances in Computer-Human Interactions ACHI 2020

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GLOBAL INFORMATICS

Development and Promotion of Educational Materials on Human-Centered Design

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Presenter's resume

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- Jun IIO, Ph.D.
  - Prof. of Chuo University, Japan
  - P.E.Jp and the certified HCD professional
  - Board member of HCD-Net and WILL, Japan
- He graduated from the University of Tokyo, 1994, and worked for Mitsubishi Research Institute, inc. for 19 years.
- He moved to Chuo University, 2013. Since then, he is a faculty member of the university.

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Current researches

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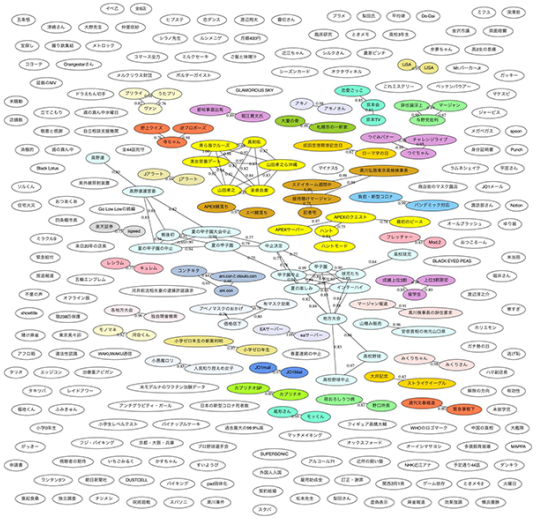
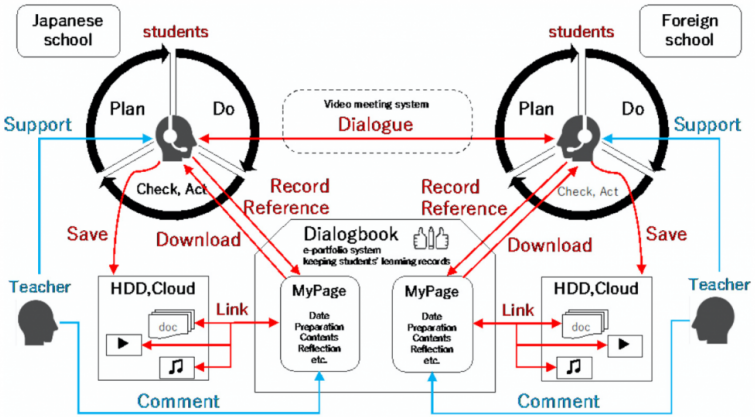
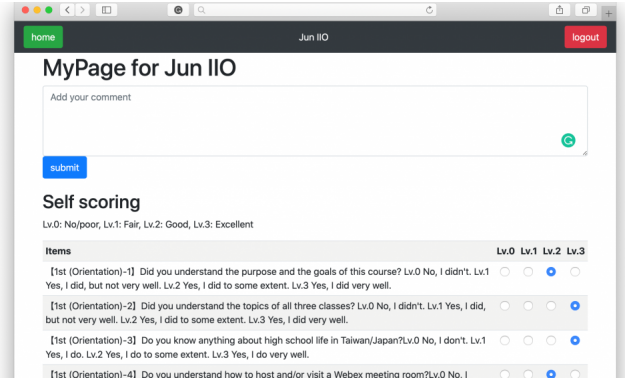
- We are now working on several researches as follows:
  - TWtrends: some visualizations on the trends of SNS
  - Niko-P: the overseas communication education between high-school students
  - Some visualization methods to improve classrooms in developing countries







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Introduction

- Human Centered Design (HCD) is the concept of a design process.
- The concept of HCD was standardized by ISO as ISO 13407 in 1999, integrated into ISO 9241-210 in 2010, and updated to ISO 9241-210:2019 in 2019.
- There are many good textbook and useful information in bookstores and the internet, respectively.
- However, the concept has not yet been widely common in service industries, including information technology (IT) industries.

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Introduction

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- Our goal: to make the HCD widespread in the industries.
  - Several working groups (WGs) were established in HCD-Net to fill the gap between entry-level and high-level education.
  - The members of these WGs have been actively working to achieve their goals.
  - “The fostering teachers WG” was established in June 2016, and it meets monthly for face-to-face discussions.
  - In addition to the meetings, several events have been held by the WG and the work has been actively progressing.

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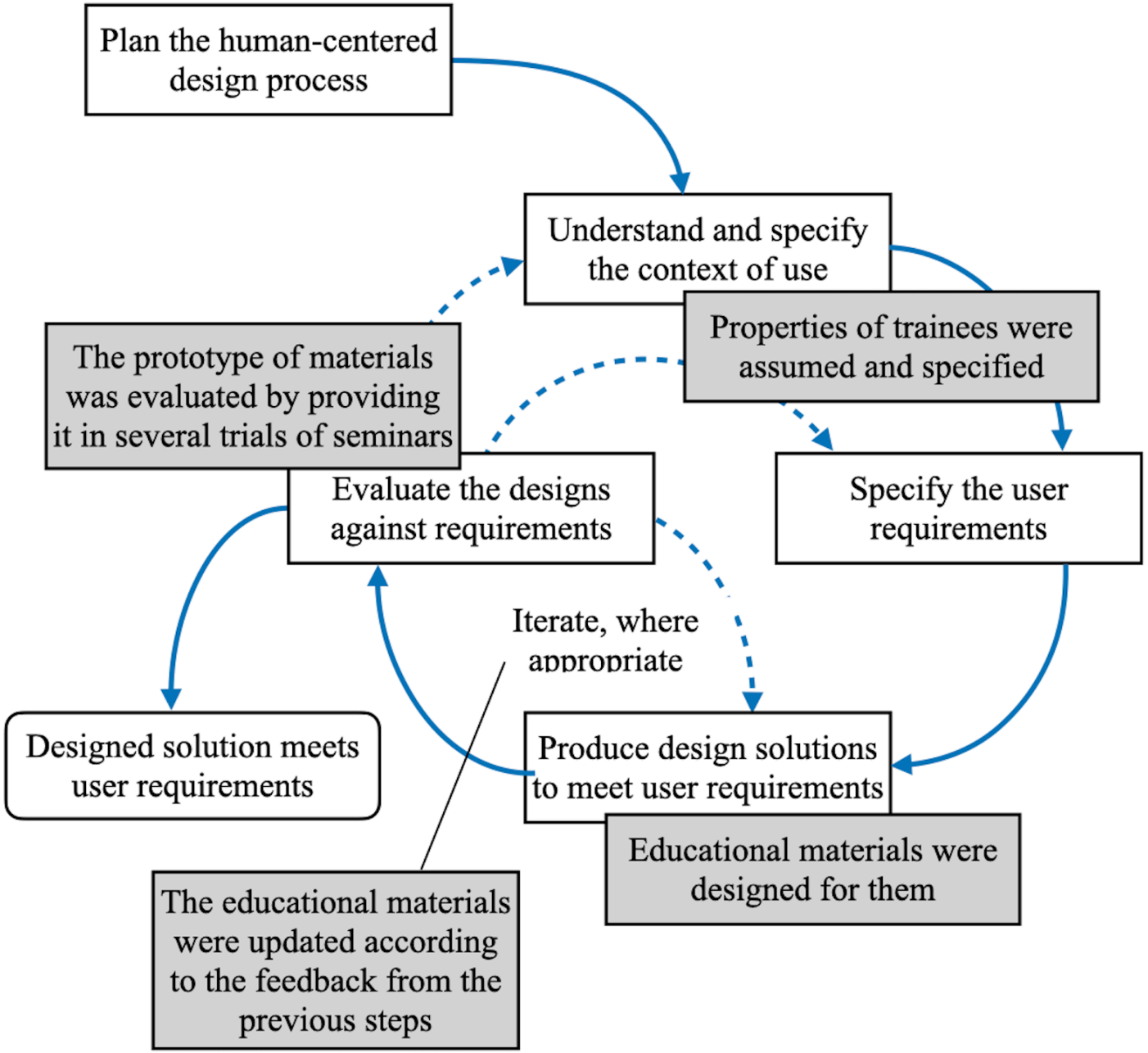
The HCD concept and our activities



Our strategy

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- The WG created two prototypes of the educational materials for engineers and salespeople.
- Educational Materials for Engineers (as the first prototype)
  - Case studies
  - The concept of human-centered design
  - Usability
  - Introducing the HCD cycle
  - Appendix (good practices)

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Our strategy

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- The WG created two prototypes of the educational materials for engineers and salespeople.
- Educational Materials for Salespeople (as the second prototype)
  - Considering the view of the customer-oriented
  - The concept of human-centered design
  - Usability
  - Introducing the HCD cycle
  - Positioning of the HCD
  - Appendix (good practices)

This includes the concept of the user experience (UX).

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Examples of the education materials

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人間中心設計入門編

Human Centered Design

～ エンジニアの方々へ ～

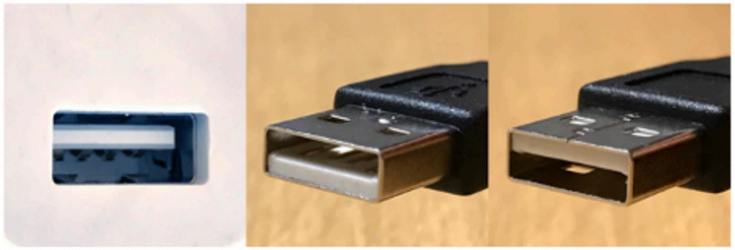
人間中心設計推進機構

CC BY NC SA

事例いろいろ②

裏表の確認が必要なUSB Type-A コネクタ

表裏を確認しないと入らないのでイライラする…
（Type-CやAppleのLightningは両面OK）



（注） USB規格書では「正しい向きが触覚で判るようにプラグの上面に刻印でUSBマークをいれること」となっているが、このマークが挿す時の方向をガイドしていることをユーザーに積極的に伝えていないことにも問題がある

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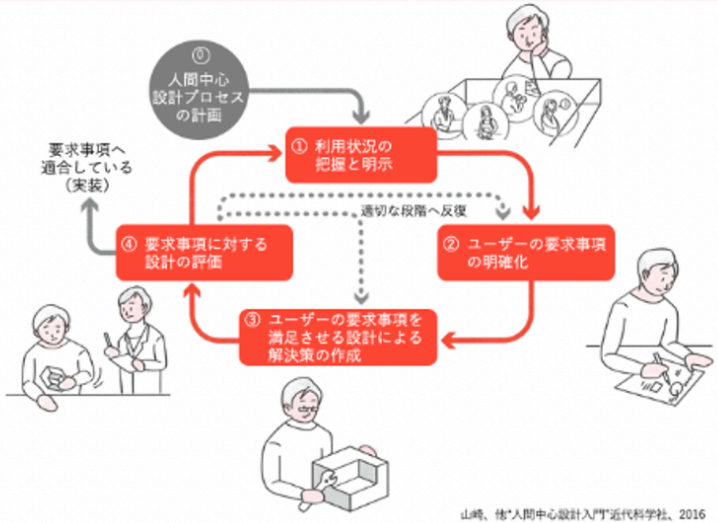
HCDサイクル（ISO9241-210）



山崎、他"人間中心設計入門"近代科学社、2016

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付録

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- ◆HCDの実践例紹介
  - HCDアウォード2016 「検体検査機器」（シスメックス）
  - グッドデザイン賞2016 「image RUNNER」（キヤノン）
  - HCDアウォード2016 「remy pan＋」（株式会社remy）
- ◆用語集

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Examples of the education materials

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- We created not only the presentation materials but also lecturers' guidebook for teaching the concept of HCD.

2018 年 11 月 02 日版

人間中心設計入門編 ～エンジニアの方へ～

研修実施の手引き

人間中心設計推進機構

講師拡大 WG

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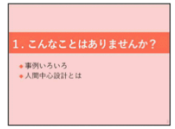
1. こんなことはありませんか？



最初に、「よろしくない事例」で受講生の興味をひきつけましょう。

ここでは、「人間中心」に設計しないとこんなものができあがってしまいますね、という例をいくつか挙げています。

Tips: 受講対象者に響きそうな例を活用、またはご自身で事例をみつけて紹介してください。

1.1. 事例いろいろ①

このスライドで提示している写真は、地下鉄の駅で見かけた自動販売機です。この自販機、実は変なデザインになっています。そこを理解してもらうことがこのスライドの狙いです。

1.1.1. 利用状況の説明①

電子マネーで払うときにタッチする部分がどこにあるでしょう？写真をよくみてください、右上にありますね。けっこう背が高い人でも、手をのばさないとタッチできません。この自販機で商品を電子マネーで購入するときの手順を考えてみるとどうなるでしょうか。

まず、商品を選び、商品選択ボタンを押します。次に、右上に手をのばして（背の低いひとはひょっとしたらジャンプする必要があるかもしれません！）電子マネーをタッチ。商品は下の取り出し口から出てきます。しゃがんで商品を取り出します。ああ、たいへんだ… 商品を購入するたびに屈伸運動をしなければなりません。

1.1.2. なぜそのような状況になってしまったのか①

では、どうしてこのような状況が起きてしまったのでしょうか。おそらく、電子マネーの機能は後から付けられたものなのでしょう。そのときに電子マネーのカードをタッチする部分をどこに付けようかという議論になったはずです。残念ながら、空いている

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Trial seminars

- The WG conducted several trial seminars to get some feedbacks from participants in the events to improve the educational materials, which was in a manner of HCD.

TABLE I. THE LIST OF TRIAL SEMINARS.

ID	*Target*	*Version*	*Date*	*Participants*
1	Engineer	alpha	Mar 4, 2017	18 pros and beginners
2	Engineer	beta	Aug 29, 2017	10 pros and beginners
3	Engineer	ver. 1.0	May 25, 2018	21 pros and beginners
4	Salesperson	beta	Jan 19, 2019	18 pros and beginners
5	Engineer & Sales-person	Modified	Dec 19, 2019	26 (mainly) beginners

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Discussions (1)

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- Specify Context of Use:
  - The WG decided on engineers and salespeople as the first and the second target group of trainees, respectively.
- Specify Requirements:
  - The materials should be simple because the WG had the assumption that the entry-level education would be conducted in one or two hours.
- Create Design Solutions and Development:
  - The WG's process for making the materials was iterative, requiring at least two cycles.
- Evaluate Product:
  - The WG's main work in 2019 was the evaluation, improve- ment, and investigation of which organizations were really utilizing their materials.

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Discussion (2)

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- Value of the Educational Materials
  - The aim of the WG was to prepare entry-level educational materials and to foster instructors who can teach newcomers not yet familiar with the concept of HCD.
  - “It is not easy to understand only by reading. It will be worth reading if some lectures were provided using this book as its textbook.” — A review from Amazon’s sales listing of the textbook.
  - During the work conducted in 2019, the WG collected several opinions and impressions of the products from the new members.

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Conclusions

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- The members of the human resource development WG have been working actively during recent years.
- We reported our activities and provides an overview of our results.
- The most significant feature of our work was the HCD educational materials ourselves were designed according to HCD processes.
- The educational materials we created are intended for two different target groups; one for engineers and another for salespeople.
- Several evaluations were conducted as part of the HCD cycles.
- We hope these educational materials will be utilized in many organizations where the HCD concept can be accepted.

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