# Course Design Tips for University of Tomorrow

**Katsuaki Suzuki**
**Toshihiro Kita**
**Naoshi Hiraoka**
**Ai Yamashita**
*Kumamoto University, Japan*
ksuzuki@kumamoto-u.ac.jp

*Abstract: Kumamoto University has launched an online professional development program for future and current university faculty. This presentation will introduce 21 tips for designing courses in three areas: Teaching methods to foster cognitive development, Redesigning assessment strategies and evaluation criteria, and Advancing learning objectives.*

*Keywords: university of tomorrow, higher education, course design, instructional design*

## Introduction

The biggest experimentation of online education has brought by COVID-19, affecting all the countries around the world. One of *EDUCAUSE Reviews* (Glantz, et al, 2021) pointed out that out of the sudden necessity, "faculty and students actively began the largest-ever nontraditional teaching experiment." It suggests, from the pandemic-introduced adaptations, five teaching enhancements can be considered for continued acceptance to make universities more engaging to the students: Collaborative technologies for sense-making, student experts for learning and technology support, back channels for informal communication, digital breakout rooms for collaborative learning, and supplemental recording for expanded learning space. These suggestions may be viewed as "new normal" for higher education institutes, trying to meet the higher expectations of returning students after the pandemic.

As course design is one of the factors that can contribute to challenges in delivering an online course effectively, U.S. Department of Education (2021) , in its 3rd volume of *ED COVID-19 Handbook*, recommended that in order to ensure a consistent and engaging online learning experience from both the educator's and learner's perspective, higher education institutes "should consider bringing on instructional designers and technologists to collaborate with faculty on the design and delivery of courses (p. 17)." A four stage approach has been advocated by U.S. Department of Education (2021) when exploring how to close access gaps for their students and support the effective use of technology in online teaching and learning: 1) Invest in professional development opportunities focused on digital learning, 2) Explore different models of delivery, 3) Leverage technology to promote student engagement, and 4) Invest in digital learning records to promote student mobility (p. 19-21).

Although the pandemic has brought us challenges and opportunities to stop and re-consider the way of teaching and learning in higher education institutes, the basic premise of the importance of design approach stays the same. For example, Fox, et al (2021) suggested evidence-based teaching practice in six categories that have been shown to result in improved learning gains for students: Transparency, active learning, formative practice, data analytic, "meta-cognition, self-regulation, and agency," and "sense of belonging and inclusive learning environment." QAA (2021), UK's Quality Assurance Agency for Higher Education, pointed out that regardless of the degree of digitalization, quality should be kept high in all dimensions of program design, resources offered to students, teaching and learning approach, technology used to facilitate modes of delivery, provider support for students, and personalization. The purpose of this paper, therefore, is to introduce 21 suggestions of course design to prepare colleges and universities for the post-pandemic future, or university of tomorrow, created and made available by Research Center for Instructional Systems, Kumamoto University, Japan.

## Mission and Effort of KU Research Center for Instructional Systems

Research Center for Instructional Systems, Kumamoto University, Japan (RCiS: https://www.gsis. kumamoto-u.ac.jp/en/) was launched in April, 2017, with its mission of conducting research and disseminating findings of how to design teaching and learning in higher education institutes, as well as human resource development in corporate sectors. The foundation of RCiS lies in our experiences as the Japan's first effort in establishing fully online Graduate School of Instructional Systems (GSIS) to train e-learning specialists, started in April, 2006 (Suzuki, 2009; 2011). RCiS has been carrying out various activities to promote applications of academic knowledge from the field of educational technology, by its Web-based Instructional Design Portal (https://idportal.gsis.jp/), some open courses (Suzuki, et al, 2011; https://www.gsis.kumamoto-u.ac.jp/en/outgoing/opencourses/), face-to-face one-day open seminars on instructional design at major locations within Japan, as well as by dispatching speakers and facilitators to academic organizations and institutes in various fields (e.g., Suzuki, 2013; 2019). In April 2018, RCiS became one of the service sharing centers for university faculty and staff development, designated and supported by Ministry of Education (MOE), Japan.

One of the new activities RCiS has started to engage in as the MOE appointed service sharing center is to launch a project named "Online Programs for Educational Reform Skills for University Faculty of Tomorrow" (Suzuki, et al, 2019). Based on our observation of activities taking place by other faculty development centers, we wonder if many existing faculty development programs limit themselves to prepare to function in current universities. We need focus on, not preparing faculty for adapting to the current universities, but to preparing them to help transformation of universities for the future. First program was on course design, which has made available online via RCiS Website (https://kyoten1.cica. jp/moodle/) in 2020, only in Japanese as shown in Figure 1.

This program consists of 5 modules: 1) Introductory 5 stories emphasizing why it is important to change course design now, 2) Suggestions for course design 1: Facilitate cognitive development, 3) Suggestions for course design 2: Evaluation for credits, 4) Suggestions for course design 3: Scaling up course goals, and 5) Reflective final report. Modules 2-4 included 7 suggestions each, resulting in a total of 21 suggestions.

**Figure 1.**

RCiS Website launching the new project (in Japanese)
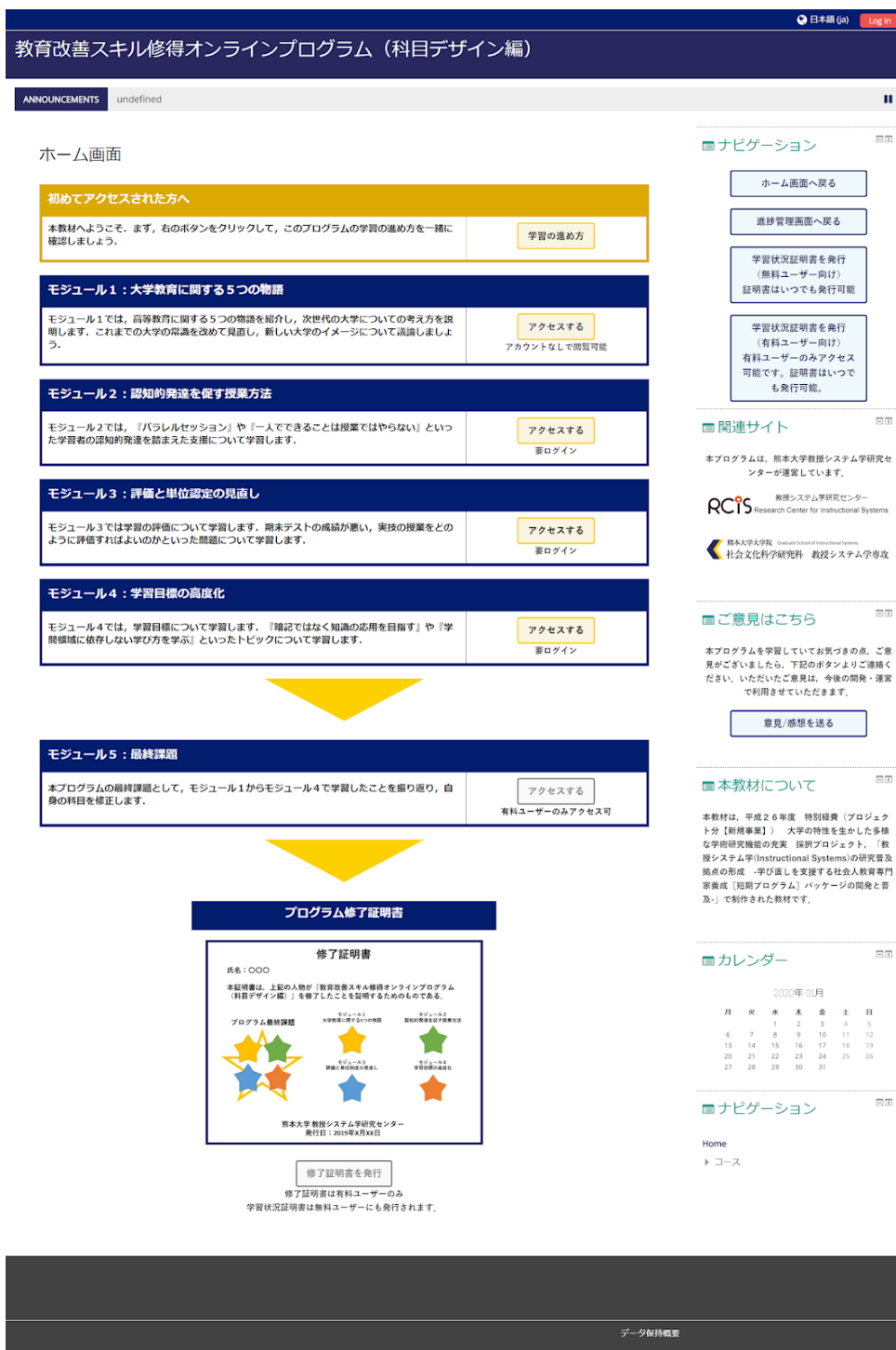


## Twenty-one (21) Suggestions for Course Design

Tables 1 to 3 summarize suggestions for course design in modules 2 to 4, respectively. Robert Mager's 3 questions of instructional design (i.e., Where are you going? How do you know when you get there? How do you get there?) were adopted as the framework of these three modules. Suggestions have been organized around

our own experiences of teaching online at GSIS, as well as research and practices of instructional design and technology.

**Table 1**
*Suggestions for Course Design 1: Facilitate Cognitive Development*

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| **1.        Require Effort and Involvement:** As students tend to choose an easy course, try not to be chosen by that reason; try to make your course as attractive as possible by dealing with meaningful contents and require reasonable effort to complete your course. |
| **2. Limit Faculty Talk to 10% or Less:** Get students involved in your course by not talking through in lecture format, but have your students involved in active learning, by providing necessary information by other formats than lecturing. |
| **3. Repeat Important Exercise 3 Times:** Get students master important skills with multiple opportunities; first by making mistakes, second by recovering, and third by succeeding at them, using similar but different examples. |
| **4. Individual Work outside of Class:** Get students ready to group work by prior work individually; Use as much as possible of class time to engage in those activities that can only possible by assembling in the classroom together. |
| **5. Individual→Group→Individual:** Put individual work before and after groupwork, to bring outcomes of individual work to contribute and avoid free-riders in the groupwork, and to reflect and apply the same skill to an analogous task individually that can be evaluated to obtain individual scores. |
| **6. Simultaneous Parallel Sessions :** Save time for whole-class sharing of group/individual products, by having multiple presentations simultaneously; not having presentations one after another. |
| **7. Use Checklist before Rubric:** Rubrics can be simplified by substituting them with a series of checklists (some required, some optional); to save time to creating them, and to make them more easily available for students' own and/or peer assessment. |

## Discussion/Conclusion

The open-access part of the program (video-based presentations, text-based explanations, examples, and auto-scored quizzes) has gained 7060 and 8062 accesses annually during FY2020 and 2021, respectively, with a total of 203 module-completion digital badges awarded automatically within the two years. Fee-based online/face-to-face cohort sessions with peer discussion, consultation, and feedback for course design reform plans have also started, resulting in MOE granted 26 certificates of completion. We hope more users from more colleges and universities will be utilizing our online resources and programs.

RCiS went on to provide two more programs, one to facilitate autonomy of college students (Suzuki, et al, 2020), and the other to design faculty development activities (Suzuki, et al, 2021), having similar structures with 21 suggestions in each. We hope to keep offering such programs, hoping to contribute to the needed transformation of higher education.

**Table 2**
*Suggestions for Course Design 2: Evaluation for Credits*

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| **1. Allow Multiple Submissions:** Avoid only-one-time chance for critical assessment, especially at the very end of the course; Set passing criteria to be shared in advance, and allow multiple opportunities for student submission, with suggestions for improvements against the passing criteria. |
| **2. Divide Evaluation into Multiple Times:** Set multiple blocks to your course with an assessment in each, so that the students can proceed to the next block(s) after passing the first block; all blocks may require having the passing score, or let each student select minimum numbers of passing blocks. |
| **3. Open-book Examination:** Avoid memorization-based assessment by allow your students brings in any/designated resources to the test, or convert any examinations to a project or report that are usually open-book application-level assessment. |

| **4. Open Exam Questions from Upfront:** Disclose the nature of assessment, by using past examinations and/or hypothetical/typical items of examination. You would need not to use the same items that called for the same correct answers (i.e., memorization for most of the cases). |
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| **5. Use Portfolio for Unique Outcomes:** Avoid any cookie-cutter artifact as the students' products by calling for unique aspects that can be placed in individual portfolio; Allow for some original elements for awarding additional scores to encourage your students to be creative. |
| **6. Use Peer Reviews with Checklist:** Provide a checklist to assess each-others' works in progress and/or final products, to have your students experience assessing works of others to reflect their own, and to save your time of assessment by utilizing the peer review results when their eyes become mature. |
| **7. Use LMS to Test Basics:** Avoid marking tests manually that can be marked by Learning Management System (LMS); to save your time, to increase check points without hesitation, to re-use them next year, and to make them available for multiple tries until all students passes if persistent. |

**Table 3**
*Suggestions for Course Design 3: Scaling up Course Goals*

| **1. Birds-eye View of the Discipline:** Provide an overview representation of the field that your course belongs (e.g., in one map), so that your students can regularly position details in relation to a big picture; to make connections of details, and to anticipate what would come next and what's left uncovered. |
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| **2. Go Upstream of Historical Events:** Avoid covering the history of your field from the past onward, by starting from the present backward; to allocate enough time to emphasize the current status of today, and to appreciate progress made in the past by comparing with today. |
| **3. Apply in Real-World Settings :** Start application of the learned contents from very beginning, to show connections of them to the real-world all the time, and to be able to feel applicability gradually increasing as the course progresses and knowledge and skills gained. |
| **4. Analyze from Multiple Perspectives:** Provide an alternative views, other than that of your field, when examining the same social phenomena/academic concepts, so that your students can appreciate your view more by comparing with others. |
| **5. Tempt to Personal Commitment:** Facilitate the shift of students' view of your course materials, from something just to remember to earn credits, to something to deeply understand by discussion, and to something worthwhile pursuing more as personal inquiry in their careers. |
| **6. Require Originality:** Allow for personal creativity in interpretation, application, and/or connection to other related matters, so that your students can work intrinsically motivated and learn your course materials as something of their own interest. |
| **7. Add Goal of Learning How to Learn:** Add as a parallel goal of your course to assist your students learn how to learn, in addition to learn your course materials; provide tips for learning your course materials more easily to facilitate meta-cognitive perspective for self-regulated learning. |

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