International Perspectives on the Flipped Classroom as a Pathway to Effective Learner Engagement: A Message From the Guest Editors

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We begin to write this message for this special issue of the *Journal on Excellence in College Teaching* with tremendous gratitude to Gregg W. Wentzell, Editor-in-Chief, and Milton D. Cox, Editor-in-Chief Emeritus, for their guidance and unwavering support throughout the entire publication process. Our appreciation also goes to the authors of the nine articles for sharing their remarkable teaching innovations that aim to promote learner engagement through the flipped classroom approach at the universities in Hong Kong, Germany, Vietnam and the United States.

Much has been advocated in recent years to shift the focus from teacher-centered to student-centered teaching methods for effective learning. The focus on engaging students in learning is rooted in a constructivist view of learning (Hein, 1991; Tam, 2000): Learning is attained when learners actively construct their own set of meanings or understandings. Moreover, learning is conceived of as a process in which learners construct their own representations of knowledge through continuously extending and refining their understanding with the knowledge and experiences they have newly acquired (Phillips, 2000; von Glaserfeld, 1996). Modern constructivist thought also cites Vygotsky's social learning approach (Tam, 2000), which strongly emphasizes the construction of knowledge through interaction and discourse with others (Baviskar, Hartle, & Whitney, 2009; Chen, 2001; Hickey, 1997). Therefore, effective and engaging learning activities often involve interactions, communications, and discussions among

students. In short, the principles derived from constructivist theory lead to rethinking and refining the way teachers teach (Howe & Berv, 2000; von Glaserfeld, 1995) and result in a stronger focus on learning activities (Brown & Long, 2006). The notion of the classroom is, thus, modified (von Glaserfeld, 1996).

Brooks and Brooks (1999) have indicated that contemporary classroom practices can differ from traditional approaches in areas such as their nature, setting, and the role of teachers. For example, Fosnot (2005) described the classroom as "a mini-society, a community of learners engaged in activities and reflection" (p. 1). Teachers no longer merely deliver knowledge within a classroom setting, but also play the role of facilitators who design and provide concrete and meaningful activities for students. Within this paradigm, teachers should ensure that their students participate actively in the learning process and help them make meaningful connections between prior and new knowledge (Hickey, 1997; Tam, 2000).

Because engaging students in interactive and constructive learning activities is crucial to effective learning, teachers may wish to explore the skills and strategies necessary for perfecting the practice. Two questions are commonly asked: How? and When? For the "How?" question, teachers should be aware of how the characteristics of different learning activities lead to different levels of learning engagement. For the "When?" question, it is deemed that the flipped classroom approach presents a golden opportunity for teachers to devote valuable in-class time for other learning activities. The flipped classroom approach is characterized by moving low-level learning (such as basic content and definition) into individual learning spaces outside class and introducing high-level or application-based learning within class (Sarawagi, 2013). This innovative teaching approach utilizes learning technology and encourages students to engage in a considerable amount of self-learning tasks outside the classroom. Both the How? and When? questions are further discussed below.

How to Design Effective Learning Activities

Not all learning activities are equally effective in achieving their intended learning outcomes. Thus, the proper design of learning activities is crucial. Effective learning activities are those that enable students to learn "actively." Jonassen, Peck, and Wilson (1999) have suggested five attributes of meaningful learning activities in the new paradigm: intentional learning, active learning, constructive learning, cooperative learning, and authentic learning. Savery and Duffy (1996) and Tenenbaum, Naidub, Jegedec, and Austind (2001) suggest that collaboration, personal auton-

omy, reflectivity, active engagement, personal relevance, and pluralism are important in modern learning environments. The modern view of learning, thus, advocates that the learning environment should not be a solitary space, but a space that supports interactions of various kinds, such as interacting with peers through collaborations and discussions and interacting with oneself through reflecting on and making personal meaning of learning experiences.

Active Engagement

There are a number of frequently cited characteristics of effective learning environments. First of all, effective learning activities require students' *active engagement* in their study task—that is, they involve a learning process where students work actively on their assigned tasks, rather than having the tasks being done or explained by teachers. Students are encouraged to participate actively in the learning process, including sharing their ideas with others, seizing opportunities to express themselves both in-class and online, and engaging in critical arguments and discussions with their peers and teachers (see, for example, Biggs, 2003; Laurillard, 2002; Roblyer, 2002; Weimer, 2002).

Open-Endedness

Open-endedness is another important characteristic of effective learning activities. Honebein (1996), for example, suggests that learning activities allow students to evaluate multiple solutions from different perspectives. In addition, effective learning activities are often *authentic*; authentic learning provides students with opportunities to apply their knowledge to real-life issues. Herrington, Oliver, and Reeves (2003) propose that authentic online learning activities should have real-world relevance, be ill-defined and complex, provide opportunities for students to collaborate and reflect together, use a variety of resources, and examine a task from different perspectives.

Social Learning

Social learning also figures strongly in effective learning activities. Simsek and Hooper (1992) stated that students are capable of developing more complex explanations and examples related to particular learning contexts when they work in groups with their peers. Goldschmid and Goldschmid (1976) promoted the benefits when students spend more time with their peers and working collaboratively than they do working

alone. Activities and instruction must, however, be well-designed so that students can draw on their prior knowledge to construct new knowledge when interacting with others (Howe & Berv, 2000) by engaging students in participatory and interactive experiences that involve problem solving, discourse, and reflection (Mezirow, 1997).

Reflection

Reflection, another element of effective learning, involves the open analysis of one's own performance or knowledge level. Learning activities that are reflective require students to think about what they are doing; in doing so, they may consider alternative strategies to explore. Reflection also allows students to critique the way others have tackled a task and suggest alternative ways of proceeding (Boyd & Fales, 1983; Brockbank & McGill, 2007). Reflection is the self-conscious analysis of one's own behavior and experiences. In terms of a learning approach, two types of reflection—personal construction and social construction—are described (Gagnon & Collay, 2001; Phillips, 2000; Shotter, 1995). Reflective learning, which is key to constructing knowledge, can be either individual or collective, and the relationship is an intimate one. Furthermore, teachers should provide scaffolding to model for students how to do reflection and solve learning challenges (Tam, 2000).

Expanding Class Time for Active Learning Activities in Flipped Classrooms

Learning activities take up a considerable amount of in-class time that has traditionally been devoted to content coverage. The flipped classroom approach can be adopted as a suitable instructional strategy for addressing this dilemma. Unilateral information-presenting activities, such as traditional lecture and course materials presentation, are removed from the classroom so that classroom time is freed up for activities focusing on assimilating or applying knowledge. Put simply, lectures are viewed by students prior to class, while the "homework" is completed during class in the form of interactive or constructive activities (see Figure 1).

There has been a growing interest in flipped classroom practice in recent years. According to Akçayır and Akçayır (2018), the number of research and case study articles on the flipped classroom has increased steadily since 2012. These studies demonstrate that there is no single universal model of flipping the classroom (Sams, 2011). The content and form of delivery of both in-class and out-of-class activities can be adapted to meet

Figure 1
The Traditional Classroom vs. the Flipped Classroom
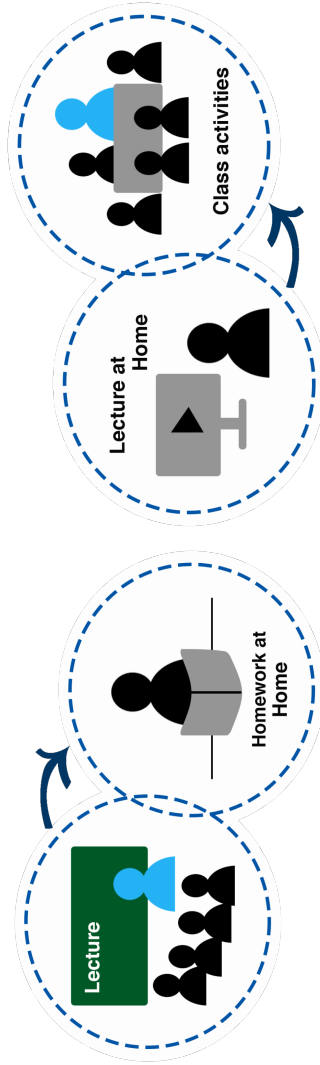
the specific needs of teachers and learners. For example, lectures can be delivered remotely with the use of technologies such as multimedia or online delivery, and in-class activities can accommodate different teaching styles (Bakers, 2000; Lage, Platt, & Treglia, 2000).

The close relationship between the flipped classroom and level of students' engagement in the learning process is apparent in the literature. In the flipped classroom, content is delivered asynchronously so that students can access and study the materials anytime, anywhere, at their own pace, giving them greater control over their own learning progress (Gannod, Burge, & Helmic, 2008). The ability to self-pace provides students with a higher degree of flexibility, which also affords them a greater sense of responsibility and ownership for their learning (Bakers, 2000; Lage et al., 2000). Moreover, the flipped classroom combines different types of learning materials to shape a constructive learning environment. Students are able to construct their own knowledge through exploring the learning materials themselves. This feature of the flipped classroom aligns with the principle of active learning (Gannod et al., 2008).

Interaction among teachers and learners is also encouraged in the flipped classroom. Teachers are given more opportunities to engage their students in the learning process, and students receive timely feedback from their teachers. Low performers can receive more attention because teachers work with them directly (Gannod et al., 2008). Moreover, interaction among students takes place more frequently through group discussions in class. By explaining concepts to each other, students' understanding of the concepts is reinforced (Baker, 2000; Gannod et al., 2008).

Brame (2013) compared learning in the flipped classroom model with learning in a traditional classroom using Bloom's taxonomy (Anderson & Krathwohl, 2001) as a framework. She suggested that a flipped classroom setting has the potential to achieve much more than the traditional approach, because learning that requires the basic cognitive levels, such as understanding, can be achieved even before coming to class, saving class time for learning at higher cognitive levels, such as application, synthesis, and analysis, through students' active engagement in learning tasks.

Many studies have shown that various learning enhancements achieved through flipped learning practice can be coupled with the learning activities carried out in the classroom—for example, deep learning in STEM (Bates & Galloway, 2012); attendance and retention (BBCACTIVE, 2010); problem-solving skills (Mason, Shuman, & Cook, 2013); and exam performance (Tune, Sturek, & Basile, 2013).

Supporting Teachers in a Cross-University Project

Flipping a classroom is not easy. Sufficient support and guidance should, therefore, be provided to teachers whenever possible. In 2017, five universities in Hong Kong engaged in a joint effort to render support to their teachers in adopting the flipped classroom model in their curriculum. The project, titled "Effective Implementation of the Flipped Classroom Approach in Hong Kong Higher Education for Enhanced Learning Outcomes," provided both in-house and public training (in form of seminars, workshops, and community of practice meetings) to teachers on the latest developments/updates in this innovative pedagogy. In addition, due to the collaborative nature of the project, all participating institutions have established a strategic framework based upon Brame's (2013) model, which consists of four key elements: *Exposure*, *Incentive*, *Assess* and *Activities*. The framework is illustrated in Figure 2. The Evaluation component was added in the framework to ensure that the deliverables of each team are systematically evaluated.

Figure 2
Strategic Framework of the Project
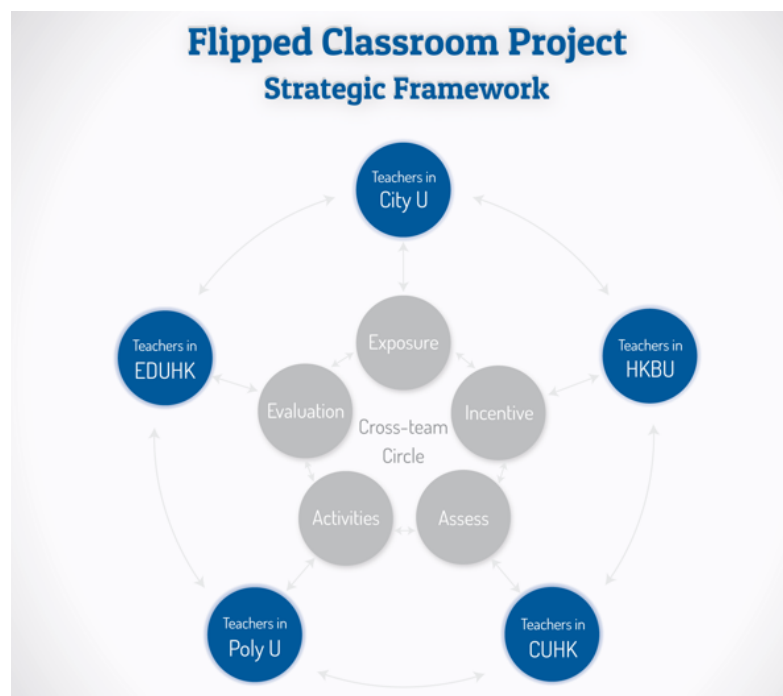
The cross-team circle consists of five university teams that are each assigned a key element of the flipped classroom, respectively. Each team is charged to use its own expertise to suggest strategies and tools for the assigned element. Through regular internal team-building meetings, all deliverables are reviewed and shared among the team members, enabling each team to acquire the knowledge and resources needed for adoption in its own university teaching community in a "train-the-trainer" manner. While providing services to its university teaching community, each team collects feedback from the teachers and students and then shares their experiences with other partnering institutions to strengthen the final deliverables.

The outer circle of the framework is composed of the teaching communities of the five participating universities. Members of each community are connected through seminars, workshops, and social events organized by the cross-team circle. A larger community of practice is, thus, formed to promote and facilitate the adoption of the flipped classroom in the higher education sector in Hong Kong.

Apart from organizing regular training activities, each university team developed a close partnership with their teachers in planning, designing, and evaluating their flipped classes using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model (Dick, Carey, & Carey, 2001; see Figure 3.)

In the context of this project, this special issue of the *Journal* aims to look at how the flipped classroom approach, under the above intervention, impacted on learner engagement. The authors of the first six articles in the issue all participated in the project. In their articles, the pioneering teachers share the new teaching strategies adopted, the challenges faced, and the wisdom gained throughout the whole process. The final three articles widen the scope of this issue by demonstrating how the flipped classroom approach can be combined with other novel teaching practices, such as the use of humanoid robots and experiential learning, to boost learner engagement.

Brief descriptions of the nine articles in this issue follow.

An analysis of the relationship between teaching and learning processes and objective learning outcomes in a social work research course is presented by **Lee et al**. The authors provide direct evidence (for example, test scores and final grades in the course) that suggests certain flipped learning activities and students' perceptions of them can predict intended learning outcomes. The authors' investigation also shows that the quality of learning is enhanced by a wide range of pre-class and in-class activities in a flipped classroom.

	Figure 3 **The ADDIE Model** **(Dick, Carey, & Carey, 2001)**
Phase	*Activities*
Analysis & Design	Each university team organized "kick-off" meetings with the teachers individually to identify instructional goals, current T&L constraints, target audience's needs, and delivery options. The team suggested instructional strategies/technologies/assessment tools that could help achieve the desired learning outcomes.
Development	Technical support was provided to the teachers if they needed to develop new teaching materials, such as instructional videos.
Implementation	Upon the teachers' request, the university team observed and evaluated how the course was delivered.
Evaluation	The university team conducted surveys to collect student feedback at the end of the course. The team also conducted interviews with the teachers individually to facilitate reflection on the teaching process. Evaluation results were provided to the teachers to inspire actionable changes for future courses.

Ting et al. investigated the impact the flipped classroom approach had on students' learning approaches in an undergraduate calculus course in which students were asked to watch interactive lecture videos at home and answer questions that tested their understanding. Students' perceptions toward the flipped classroom model and their learning approaches were then identified through two surveys. The study provides strong evidence that using interactive lecture videos in a flipped classroom can better engage students and prompt a deeper approach to learning.

Guerra examines the relationship between academic self-efficacy, self-regulated learning strategies, participation in learning activities, and academic performance in an undergraduate marketing course in which the flipped classroom approach was employed. Evaluation of the data collected shows that self-regulated learning strategies had a mediating role in the relationship between self-efficacy and participation in flipped class activities, suggesting that learners who acquire such strategies are able to benefit academically from participating in flipped classroom activities.

Lam et al. examined the learning outcomes of the flipped classroom in 38 courses offered by five universities in Hong Kong. Students were required to complete a survey that required them to self-evaluate their capabilities (such as critical thinking and interpersonal communication) at the beginning and the end of the course. The findings show that the impact of the pedagogy may depend on contextual factors and may emerge gradually over a longer term.

Wan et al. describe a case study in an undergraduate advanced psychology course that aims to examine changes in students' learning preferences and capabilities before and after flipping the learning of a major psychology topic. Results revealed that although students enjoyed the new teaching approaches, such as the pre-class self-paced learning and interactions with peers, no significant differences in learning preferences or capabilities were found. The authors suggest that better alignment of teaching and learning activities and assessment is important to yield the intended outcomes.

Donald reports on an inverse correlation between learning performance and student satisfaction in a postgraduate law course delivered in flipped mode. While assessment results of student work improved significantly after the flipped approach was introduced, students' satisfaction with the course dropped. The author's findings indicate that effective course design does not always translate into better student satisfaction, and more may need to be done to "nudge" students to appreciate novel pedagogy even if it increases their performance.

Zehler and Cole flipped two nursing courses at a university in the United States and investigated whether students' higher-level thinking skills improved with this new teaching approach. Their data (gathered from test items, pre- and post-surveys, and a student perceptions survey) suggest that students' critical thinking and clinical judgment, as well as their engagement and perceptions of the flipped classroom, improved significantly, both in the didactic classroom and in the clinical setting.

Yen et al. discuss the use of the Technology, Pedagogy, and Content Knowledge - Context Learner (TPACK-XL) model in implementing the flipped mode and the effects the model has on student learning in Vietnamese higher education. Various flipped classroom designs that incorporate different learning scenarios, such as academic advising, group work, problem-based learning, experiential learning, are presented.

Heinsch and Handke describe a project initiated at the University of Marburg, Germany, that promotes the integration of humanoid social robots into the flipped classroom. The authors discuss how students and teachers can benefit from the utilization of robots and describe possible applications of the robots' capabilities in teaching and learning.

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