FLIPPED ESL TEACHER PROFESSIONAL DEVELOPMENT:
EMBRACING CHANGE TO REMAIN RELEVANT

by Rafiza Abdul Razak, Dalwinder Kaur, Siti Hajar Halili and Zahri Ramlan
University of Malaya, 50603, Kuala Lumpur
rafiza @ um.edu.my, siti_hajar @ um.edu.my,
zahriramlan @ gmail.com

Abstract
Many traditional professional development programs that are initiated to equip ESL teachers with knowledge and skills have been futile for numerous reasons. This paper addresses a gap in the recent research of ESL teachers’ professional development. Literature has revealed many shortcomings of the traditional and online professional development programs that are widely conducted; thus, an implementation framework of flipped professional development program is proposed in this paper, based on Malaysian educational practices. Integrated theories of Zone Proximal Teacher Development (ZPTD) and revised Bloom’s Taxonomy are adapted in designing the Flipped Teacher Professional Development (FiT-PD). The implementation of the FiT-PD program is conducted in the four Train-to-Learn (TL) stages; remembering and understanding (TL-1) conducted in face-to-face mode, applying and analysis (TL-2) conducted via online, evaluation (TL-3) conducted in face-to-face mode and finally creating (TL-4) conducted via online. Thus, the paper recommends an implementation framework of flipped teacher professional development. The recommendations assist educational policymakers to strategize better planning and organize flipped professional teacher professional development (Fit-PD) for ESL teachers.

Keywords: ESL teacher; professional development; flipped learning

1. Introduction
Hazri, Nordin, Reena & Abdul Rashid (2011) pointed out that professional development, which was previously thought of as a short-term process, has now improved by leaps and bounds and is deemed as a long-term and ongoing process that promotes growth and development of the teaching profession. In line with this, a special committee set up in 1995 by the Ministry of Education of Malaysia has been assigned to look into the professional development of teachers, and one of the recommendations made was to encourage teachers to attend in-service courses (Mohd. Sofi Ali, 2002). Recently, Education Director General of Malaysia said that to realize the country’s aspirations, initiatives manifested to train and improve the skills of teachers through continuous professional development are needed (cited in New Straits Time Online, 2014). Among the significant aspects that maintain teacher
professional development in Malaysia are continuous professional development and in-service training (In-SeT) (Hazri et al., 2011).

All Malaysian teachers are required to fulfill and document 42 hours (7 days) of professional development programs per year so that their content knowledge, pedagogical skills and soft skills can be improved (Ministry of Education, 2009). The Ministry of Education (MOE) claims that the 42 hours of professional development which may include workshops, conferences, trainings, and seminars are school-based (Kabilan & Kasthuri, 2013). However, studies have shown that the professional development programs in Malaysia are mostly cascade-type (top-down approach), and they do not bring benefit to the teachers; thus, the teachers are dissatisfied (Kabilan, 2004; Kabilan, Vethamani & Chee, 2008). Teachers need to attend any professional development program that is dictated by the MOE (Kabilan & Kasthuri, 2013). Another study conducted in the local setting also shows that besides shortage of time, unsupportive working environment holds teachers back from learning and attempting new pedagogies in their classrooms (Thang et al., 2009). ESL teachers in Malaysia express their frustration over lack of opportunities in voicing out their needs for professional development programs that are relevant to their field and interests (Kabilan and Kasthuri, 2013; Mukundan and Khandehroo, 2009; Khandehroo, Mukundan and Alavi, 2011).

Indisputably, professional development for ESL teachers can take many forms. Birman, Desimone, Porter and Garet (2000) stated that professional development falls under two basic categories: (i) traditional professional development and (ii) reform-type professional development. The traditional professional development uses ‘one-shot’ workshops as a medium to equip teachers with the knowledge and skills they need; workshops, which are undeniably the most common type of professional development, receive most criticisms among all (Garet, Porter, Desimone, Birman, & Kwang, 2001). Guskey (1986) elaborated that this type of professional development which was introduced during the post-depression era implied a gap in teacher skills and knowledge. Several researchers have shown evidence on the failure of such ‘one-shot’ workshops (Fullan & Stiegelbauer, 1991; Johnson, 1989; Lovitt & Clarke, 1988).

Apart from workshops, other forms of traditional professional development that share the same features as workshops include institutes, courses and conferences (Garet et al., 2001; Little, 1993) as well as district training, out-of-district training and post-graduate courses (Desimone, Porter, Garet, Yoon & Birman, 2002). These traditional forms of professional development are usually conducted by leaders with expertise in their respective fields (Garet
et al., 2001). However, Boyle, While and Boyle (2004) pointed out to the fact that teachers learn about topics that are irrelevant to them by passively listening to these experts. These traditional forms are also criticized for failing to spur a change in teachers’ competence and teaching practice (Boyle et al., 2004; Day & Sachs, 2004; Desimone, 2011; Hawley & Valli, 1999; Kwakman, 2003; Loucks-Horsley, Hewson, Love, & Stiles, 1998). The ineffectiveness of these traditional forms of professional development has brought out the drive for more research on professional development (Clarke & Hollingsworth, 2002). As a consequence, an alternative to the traditional form is the ‘reform’ form of professional development which includes programs such as mentoring and coaching (Garet et al., 2001).

2. Malaysian ESL teachers and professional development

ESL teachers in Malaysia have insisted upon professional development programs that are designed according to their needs (Kabilan et al., 2008). There are so many changes and variation made to policies that require ESL teachers in Malaysia to constantly improve or change their methodologies and teaching practice that, without embracing a professional change, they may suffer a burnout (Mukun & Khandehroo, 2009). Thus, professional development programs should be parallel with the changes that are made to the educational aims and policies for ESL in Malaysia (Khandehroo, Mukundan, & Zhinoos, 2011). Kabilan (2007) reported that issues related to policies of ESL have always been discussed by various stakeholders in Malaysia, which include politicians. Kabilan and Kasthuri (2013) also mentioned that the flip-flopping in teaching and learning policies in Malaysia has further aggravated matters related to teacher development. In their paper, they also expressed concerns about the new English curriculum that was introduced in 2002, known as English Language Curriculum for Primary Schools (KSSR). According to the authors, the curriculum may not be successfully implemented in schools if teachers’ needs on their professional development are neglected. Therefore, as mentioned by previous studies, the ESL teachers in Malaysia call for professional development programs that are relevant to them and programs that are constantly reviewed for their effectiveness (Mukun & Khandehroo, 2009; Khandehroo, Mukundan, & Zhinoos, 2011).

In fact, Kabilan and Kasthuri (2013) who conducted a nationwide study of the process of identifying the professional development needs of ESL teachers in Malaysia have come up with a model that has 3 stages of professional development programs: (1) planning and development, (2) implementing professional development and engaging teachers, and (3) evaluating and enriching teachers’ experiences and professional growth. Despite agreeing that
professional development programs should be voluntary, the ESL teachers apparently did not express concerns on ‘self-initiated’ or ‘self-directed’ professional development. Nevertheless, researchers asserted that ESL teachers should engage in self-initiated or self-directed professional development by collaborating with other teachers as it could fulfill the needs of their students as well as the school (Kohl, 2005; Kabilan and Kashturi, 2013).

3. Issues and challenges in ESL teacher professional development

Many traditional (face-to-face) professional development programs that are initiated to equip teachers with knowledge and skills have been futile for numerous reasons (Fullan, 2001; Gordon, 2004; Tinoca, 2005; Wangsopawiro, 2012). Only mere 12 to 27 percent teachers have seen an improvement in their teaching after attending such professional development activities. Researchers stated that ESL teachers are not voluntarily participating, but are often mandated and obliged to attend the workshops where the programs are characterized by the ‘one size fits all’ approach, topics are totally unrelated and are too broad to be applied in classroom settings (Tinoca, 2005). They are unmotivated to participate as they are not equipped with platform or opportunities to express their needs and interests as well as the problems they face in the classroom (O’Brien, 1992, Wangsopawiro, 2012). Thus, they feel disconnected from the learning experience planned for them (O’Brien, 1992). The designers fail to fit in ESL teachers’ practical knowledge in the process of developing the programs (Van Driel et al., 2001; Haney, Czerniak & Lumpe, 1996; Klinger, 2000; Wangsopawiro, 2012). Hence, professional development programs which emphasize on the lecturing strategy are very common and reflect a choice of methodology which is poor and not innovative (Gersten & Santoro, 2010; Radford 1998). Lynch (1997) advocated the ineffectiveness of traditional professional development programs since the ideas and strategies suggested during the programs are not implementable in reality.

The new reforms and ideas may sound innovative and interesting, but they can hardly be implemented in a real classroom setting, and this happens owing to lack of opportunities provided to teachers in experimenting the new reform themselves. Furthermore, Hayes (1997) and Hopkins (1986) identified time constraint and lack of incentives as major reasons preventing teachers from attending traditional professional development programs. However, Guskey and Kwang (2009) described the workshops as a waste of time and money as there is seldom a follow-up event to provide sustained support or to get feedback from teachers. They added that most of these workshops are poorly organized and tend to focus on unproven ideas. Bredeson (2002) pointed out that lack of time, money, and appropriate structure contributes to
the failure of a continuous learning opportunity for teachers to refine their knowledge and practice.

Nevertheless, similarly to traditional professional development, research conducted has shown that online teacher professional development (OTPD) presents a number of shortcomings and barriers (Dede et al., 2009; Ginsberg, Gray & Levin, 2004). Bransford et al. (2000) claimed that while training teachers, facilitators and researchers should move beyond the traditional professional development programs by finding new pedagogies that are offered by the implementation of Information and Communication Technologies. With the availability of a wide range of technological devices, OTPD programs have been proliferating (Brown & Green, 2003; Dede, 2006; Mandinach, 2005; O’Dwyer, Carey, & Kleiman, 2007; Reeves & Pedulla, 2011). Researchers asserted that a few of these OTPD courses have brought upon a remarkable progress in teacher knowledge as well as the quality of teaching and learning (Chitanana, 2012; Masters, DeKramer, O’Dwyer, Dash, & Russell, 2010). Taking into account the myriad of benefits OTPD offers (Brown & Green, 2003; Carter, 2004), OTPD was introduced to eliminate the barriers that were caused by traditional professional development programs (Jackson, 1999; Reeves & Pedulla, 2011). Roskos, Jarosewich, Lenhart, and Collins (2007) highlighted that OTPD has the potential of transforming professional development programs from ‘now and then’ to more frequent, consistent and continuous programs.

Capitalizing on the Internet as the prime vehicle and with emerging technologies, OTPD is a promising platform that is known to be convenient with an advantage of “anywhere anytime” access (Carter, 2004; Harlen & Doubler, 2004; Swenson & Curtis, 2003; Vrasidas & Zembylas, 2004). The Internet has revolutionized education by providing opportunities to access information (Glassman & Kang, 2012), and it has also provided a social platform for people to engage with one another (Boyd & Ellison, 2008). Thus, OTPD encompasses courses and learning opportunities via online interactions with other teachers or facilitators (Treacy, Kleiman, & Peterson, 2002); it is also a platform that supports collaboration among teachers in the virtual community (Chapman, Ramondt, & Smiley, 2005; Park, Oliver, Johnson, Graham & Oppong, 2007). Also, OTPD offers flexibility and support by helping teachers learn at their own convenience to the extent that they can even access resources that may not be locally available (Dede, Ketelhut, Whitehouse, & McCloskey (2009). In brief, Fishman et al. (2013) stated that OTPD offers professional development opportunities to teachers in rural and isolated areas by having courses at respective locations. To add on, a study conducted by Reeves and Li (2012) found that ESL teachers participating in OTPD have shown a favorable attitude towards online-mediated professional development.
Despite the exponential growth of emerging technologies and the Internet, studies have shown that ESL teachers have used them to a limited extent (Rolando, Salvador, Souza & Luz, 2014). The analysis of collaborative activities on blogs has shown very little interest by teachers (Carvalho, 2011). Owing to the fact that technology such as the Internet is a huge part responsible for the delivery of online professional development programs, the computer skills of the trainers and teachers are of concern (Reeves & Li, 2012; Roskos et al., 2007); such concerns regarding the computer competency of teachers also exist in the literature of general online learning (Muilenberg & Berge; Tallent-Runnels et al., 2006). Rolando et al. (2014) cautioned that in spite of the exposure provided by researchers on the prospects of a social platform for educational benefits (Martin et al., 2011), it has failed to highlight the ways ESL teachers can make use of these social tools to find support in the professional development of their peers. Besides computer competence of participants, access to a computer with reliable Internet connection also provides a challenge towards implementing online professional development programs (Treacy, Kleaman & Peterson, 2002). Treacy et al. (2002) added that the primary benefit of online professional development which is to provide an ‘anytime, anywhere’ access to learning will be futile without reliable Internet connection.

4. Flipped learning in teacher professional development

“If we are to remain relevant, we must embrace change” (Slomanson, 2014).

The rationale of employing flipped learning in teacher professional development stems from flipped learning research in education programs. This is parallel with the features of effective professional development. Flipped learning, which is also referred as blended learning and hybrid learning, shifts direct instruction from a group learning space to an individual learning space (Bergmann & Sams, 2014; Mok, 2014; Slomanson, 2014). However, regardless of the fact that the video component is used in online, flipped, and blended learning, there is a clear distinction among them. Online learning is conducted virtually without the face-to-face component; blended learning, on the other hand, has the online component, but it is conducted during class time alongside face-to-face instruction (Allen, Seaman, & Garett, 2007).

In flipped learning, however, instruction that is traditionally conducted inside the classroom is flipped with whatever that used to be done outside the classroom (Baker, 2000), and this is also referred as “inverted classroom” (Lage & Platt, 2000). Traditional classrooms are not always successful as it is challenging to cater for diverse needs and abilities of the
students. Thus, in flipped learning, instructional videos are pre-recorded before class and uploaded for students to download whenever and wherever convenient for them (Jiang & Zhou, 2014; Mok, 2014). The aim of flipping the classroom is to maximize face-to-face time with students and instructional materials, be it videos, podcasts, or screen casts. This can be beneficial in increasing students’ knowledge and understanding before class. For improved comprehension on a particular topic or module, they can watch the videos multiple times at their own pace (Bull, Fester, & Kjellstrom, 2012). Bergmann and Sams (2014) argued that it is not feasible to deliver instruction to a large group through a face-to-face meeting, and the best setup is the one in which the face-to-face time is used to help students understand the content. This is how students are able to reach higher levels of Bloom’s Taxonomy (Gilboy, Heinerichs & Pazzaglia, 2015) as they are provided with opportunities to apply, analyze, synthesize, and evaluate knowledge they developed before class into their group learning environment (Jiang & Zhou, 2014). Through active engagement in learning, students eventually develop learner autonomy.

Since flipped learning has been proven to be advantageous in addressing diverse needs and promoting active learning, it is justifiable to try it in the teacher professional development programs. Nevertheless, blended professional development programs have been nascent recently. Belland et al. (2015) conducted a blended professional development to help teachers learn to provide one-to-one scaffolding during a problem-based learning unit. Their study incorporated three seminars which allocated for one hour and a half, one 8 hour workshop, and 4 weeks of online education activities.

Professional development programs that are based only on face-to-face activities lack sustainability (Dede et al., 2008; Holmes, Polhemus & Jennings, 2005). Alternatively, Owston, Wideman, Murphy, and Lupshenyuk (2008) pointed out that it is difficult to organize and maintain a virtual community through OTPD programs, and this is largely because participants lack trust, support and a sense of belonging in their virtual community of learning (Charalambos, Michalinos & Chamberlain, 2004). Thus, experiencing the face-to-face component is no doubt significant in strengthening the bond among participants in a learning community, which calls for a blended professional development that would integrate both the face-to-face and the online component (Owston et al., 2008).

Literature supports the integration of both online and face-to-face components in teacher professional development; researchers and developers of the program can decide whether to flip it, blend it or even mix it. An effective professional development program is said to be coherent, has a content focus, is conducted in a longer duration, and promotes
active learning and collaboration (Desimone, 2009; Garet et al., 2001). A blended approach in a teacher professional program fits best the design of an effective teacher professional development (Owston et al., 2008). Owston et al. (2008) explained that blended professional development can be conducted in a longer duration as teachers do not have to leave their classrooms or schools to participate. It can fit into teachers’ busy schedules by providing opportunities to go through the content at their own pace. Besides, by utilizing the online component, teachers can experience stronger social cohesion in their communities of practice (Dede et al., 2008; Lock, 2006). Owston et al. (2008) elaborated that there are many opportunities for collaboration as teachers can be involved in face-to-face sessions by applying their knowledge through ‘hands-on’ activities and later share feedback, thoughts and experience through the online component.

5. Theoretical framework

Vygotsky’s Zone of Proximal Development approach has been advanced by Warford (2011) to educate teachers within the Zone of Proximal Teacher Development (ZPTD). Warford (2011) explained ZPTD as “the distance between what teacher trainees are able to do on their own and a proximal level that they are capable of attaining with the guidance and strategic mediation of an expert in the field” (p.253).

Amer (2006) explained that taking into consideration the current developments in the educational and psychological literature where students are more knowledgeable of and responsible for their own learning and thinking, the Revised Taxonomy (RT) was developed. In brief, there are two reasons behind the revision of OT (Anderson et al., 2001); besides the intention, it is also revised to attract the educators’ attention back to it and at the same time to emphasize the value of the OT for being a taxonomy that can still be applicable in the recent days (Rohwer & Sloane, 1994).

Warford (2011) stressed that teacher education curriculum based on Vygotskyan approach should promote mediation between teachers’ prior teaching experiences, their pedagogical knowledge and observation as well as their tacit beliefs about pedagogy. Having said this, instead of cramming teaching candidates with facts, trainees create their own meaning by utilizing the cultural tools espoused by Vygotsky’s theory.

Bloom’s Educational Objectives; remembering, understanding, applying, analyzing, evaluating and creating are well integrated with ZPTD in designing in-service teachers programs (Rolando, Salvador, Souza, Luz, 2014). As shown in Table 1, ZPTD starts with teachers’ reflection (self-assistance) on their prior experiences and beliefs, and moves toward
experts’ assistance (Tayebeh & Farid, 2011). Each stage progresses sequentially complying to Bloom’s Educational Objectives.

Table 1. Adaptation of ZPTD and Bloom’s Taxonomy into in-service teacher programs

<table>
<thead>
<tr>
<th>ZPTD</th>
<th>Bloom’s Taxonomy</th>
<th>Sample Interventionist Dynamic Assessments</th>
<th>Sample Interactionist Dynamic Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Self-assistance [Stage II in ZPD (Gallimore &amp; Tharp, 1990)]</td>
<td>-Remembering -Understanding</td>
<td>Preparing learning autobiographies, Responding to prompts about prior experiences</td>
<td>Discussion, sharing autobiographies, follow-up questions</td>
</tr>
<tr>
<td>II. Expert other assistance [Stage I in ZPD (Gallimore &amp; Tharp, 1990)]</td>
<td>-Applying -Analyzing</td>
<td>Analysis of teaching practices (demonstrations, videos, field observation) Role-taking/playing Forced choice quizzes (written) WebQuests Cubing exercises</td>
<td>Leading questions and follow-up discussion Processing role plays Oral quizzes</td>
</tr>
<tr>
<td>III. Internalization</td>
<td>-Evaluating</td>
<td>Journaling Micro-teaching Candidate statement of teaching philosophy</td>
<td>Discussion, dialogic partners</td>
</tr>
<tr>
<td>IV. Recursion</td>
<td>-Creating</td>
<td>Journaling Clinical reflective reports: collecting information and making warranted claims for change On-line forum Role taking/playing</td>
<td>Discussion, sharing autobiographies, follow-up questions, post-observation conferencing, Processing role-plays</td>
</tr>
</tbody>
</table>

6. Implications and recommendations

Hinging on the concept of the classroom flip and using the theory of Bloom’s Revised Taxonomy and ZPTD as the framework, this paper proposes the flipping concept in the professional development programs, thus introducing a Flipped Teacher Professional Development for ESL teachers (see Figure 1).

Daniels (2014) revealed that traditional professional development only provides pedagogical ideas and resources to teachers while leaving no time for design and implementation; thus, a flipped professional development idea was developed in Stillwater, Minnesota to emphasize on the design and development as well as the implementation of the curriculum via technology integration. Daniels further added that the flipped professional development can be conducted in a workshop setting provided that the coaching element is added to it. In this approach, the ESL teachers will watch the video tutorials to learn new
methodologies, get inspirations and ideas, and later discuss with the experts on developing those ideas; also, the experts facilitate the teachers; coach, scaffold, and provide guidance until the teachers manage to develop and implement the resources (Flanigan, 2013). The crux of this paper concerns supporting a flipped professional development program for ESL teachers.

The proposed instructional plan as presented in Table 2 has been implemented in five selected primary schools. The online component is facilitated online whereas the face-to-face (F2F) component is planned to be conducted in the respective schools. The participants for this implementation phase are ESL teachers of the respective schools who are involved in a one-month training program.

The FiT-PD training begins with a face-to-face meeting with the teacher participants and this stage is basically trainer regulated. The two cognitive processes involved in this stage are remembering and understanding; participants recall their prior experiences and share their learning autobiographies.

Subsequently, they move to the online component where small, bite-sized chunks of online activities are utilized through trainer facilitation. At this stage, they apply and analyze teaching practices based on the proposed module. As the participants’ confidence increases, they internalize their learning in a face-to-face meeting with other participants in which they go through the evaluation cognitive process.
Finally, the training ends with an online session where participants collaborate and share with one another through online learning platforms, and simultaneously, work together to create their own innovative methodologies.

Table 2. Proposed instructional strategy for FiT-PD

<table>
<thead>
<tr>
<th>Implementation</th>
<th>Phases</th>
<th>Cognitive Processes</th>
<th>Proposed Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL 1 (Face to face)</td>
<td>Self Assistance</td>
<td>- Remembering</td>
<td>- Responding to prompts about prior experiences</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Understanding</td>
<td>- Preparing and sharing learning autobiographies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Discussions</td>
</tr>
<tr>
<td>TL 2 (Online)</td>
<td>Expert Assistance</td>
<td>- Applying</td>
<td>- Analysis of teaching practices based on the FiT-PD module</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Analyzing</td>
<td>- Leading questions and follow up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- WebQuests</td>
</tr>
<tr>
<td>TL 3 (Face to face)</td>
<td>Internalization</td>
<td>- Evaluating</td>
<td>- Microteaching</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Journaling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Statement of teaching philosophy</td>
</tr>
<tr>
<td>TL 4 (Online)</td>
<td>Recursion</td>
<td>- Creating</td>
<td>- Online forums</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Journaling</td>
</tr>
</tbody>
</table>

Figure 2 Implementation framework of FiT-PD

7. Conclusions
The implementation of the Flipped Teacher Professional Development (FiT-PD) program is conducted in four Train-to-Learn (TL) stages (Figure 2); remembering and understanding (TL-1) conducted in a face-to-face mode, applying and analysis (TL-2) conducted online, evaluation (TL-3) conducted in a face-to-face mode and finally creating (TL-4) conducted online. Literature has revealed many shortcomings of the traditional and online professional
development programs that are widely conducted; thus, a flipped professional development program proposed in this study can be a viable solution.

Professional development programs are essential in maintaining teacher professionalism, and the approach of the program must constantly fit the demands of educational reforms. It is fundamental that ESL teachers are kept abreast with the ever-changing teaching pedagogies that are brought by the integration of Information and Communication Technologies in education. ESL teachers have to adopt a different approach as it is the age of the young learners that makes it unfitting for the teaching of formal concepts. Thus, it is widely recognized that teachers’ knowledge, skills, and practices are decisive in the success of any teaching career. Khandehroo et al. (2011) stated that there are very few descriptive research designs about the specific instructional skills that ESL teachers need professional development for. It is hoped that this paper will help educational policymakers to better plan and organize flipped professional teacher professional development (Fit-PD) for ESL teachers.

Acknowledgement
This work was supported by the Fundamental Research Grant Scheme (FRGS) Grant No. FP017-2014B from Malaysia Ministry of Education and also supported partly by COMSTECH-TWAS Joint Research Grants Programme. The administration and financial operation of TWAS is undertaken by UNESCO (UNESCO FR: 3240283415).

References
Bergmann, J., & Sams, A. (2014, May). Flipped learning: Gateway to student engagement: There’s more to flipped learning than just asking students to watch videos at home and complete worksheets in class.
Find out how to use the flipped model to take your teaching—and your students—to new places. Learning & Leading with Technology, 41(7), 18-23.


