Adopting Flipped Learning Network in Teaching

Bushra Ni'ma Rashid *
Bushra Saadoon Al – Noori**

*Assistant Professor Assistant Professor College of Education Ibn Rushd for Human Sciences/ English Department/Baghdad University
**Assistant Professor Assistant Professor College of Education Ibn Rushd for Human Sciences/ English Department/ Baghdad University

Abstract:

Delivering lecture content to students at home through electronic means and using class time for practical application activities is achieved through a teaching method that is called flipped classroom. This method may be useful for information literacy instruction. This study aims at describing many of the characteristics of the flipped classroom teaching network and answering the following questions: Is the differentiation and independent learning achieved through the flipped classroom concept is a successful method or not? Does this method in which students watch video lectures for homework and complete traditional homework assignments in class increase the students' understanding? And does independent learning provide students with an opportunity to complete work in the class with teacher assistance and this leads to reducing workload and stress in classroom with increasing content knowledge? It is hypothesized that different modalities are used to learn students and they should be allowed to demonstrate competency in suitable ways. These modalities may be manifested through visual, audio, naturalistic, logical-mathematical kinesthetic, musical, and interpersonal learning styles.
Key words: flipped learning, flipped teaching, classroom, network

1. Introduction

Traditionally, a teacher stands at the front of the classroom and delivers a lecture about a specific topic such as Civil War to clarify it. He uses a white board to write unfamiliar vocabularies. The students who are hunched over desks and arranged in rows take notes. At the end on the lecture which usually extends for fifty minutes, the students copy down the night's homework assignment to do it at home. This homework usually consists of reading specific pages in a textbook and answering the questions at the end of the chapter. The time of the lecture is not enough to cover such topic which represents dramatic and defining period in our nation's history. Many questions are left without answers. The teacher, does not have time to make students participate individually, is acutely aware that many students do not understand the day's lesson. The next day, collecting and briefly reviewing the homework assignment will be the task of the teacher. If students have additional questions the teacher will not answer them because he is restricted to the time of a lecture.

Breaking this lecture-centered instructional model by shifting the focus from the curriculum pacing guide to student learning needs as the driver of instruction becomes a main objective of educators. This reason motivates them to adopt an alternative model of instruction called Flipped Learning in which digital technologies are used to shift direct instruction outside of the group learning space to the individual learning space, usually via videos. Khan Academy, Coursera, TED talks, and even YouTube can be regarded as online resources associated with the flipped classroom, providing access to record lectures, instructional videos, and sometimes other interactive elements for teaching and learning. In many cases instructors depend on these resources to provide the lecture content to implement this method (Bull, Ferster, & Kjellstrom, 2012: 10-11.). The flipped classroom has two defining components: delivering the lecture outside of class, usually through some electronic means, and doing the practical application assignments, formerly homework, in the classroom (Educause, 2012: Internet).Offloading direct instruction in this way gives teachers more time to communicate with their students face-to-face individually. Availability of time enables students to collaborate with peers on projects, engage more deeply with content, practice skills, and receive feedback on their progress. Following this method helps teachers to devote more time to coaching their students, help them develop procedural fluency if needed, and inspire and assist them with challenging projects that give them greater control over their own learning

2. Flipped Learning

Loucky and Ware (2017:77) define Flipped Learning as "school work at home and home work at school," using the approach of Flipped Learning teachers are allowed to implement a methodology, or various methodologies, in their classrooms.

In the Flipped Learning model, teachers , depending on one of several technologies ,shift direct learning out of the large group learning space and move it into the individual learning space. Teachers record and narrate screencasts of work they do on their computer desktops, create videos of themselves teaching, or curate video lessons from internet sites such as TED-Ed and Khan Academy. Many educators start flipping their classroom by using these readily available materials. The videos or screencasts are available for students to access at any time and place. It is not a matter if the student is at home or on the bus and even in the hospital because he can use these devices whenever and wherever he wants. He can use them as many times as he likes, enabling him to come to class better prepared (Musallam, 2011: 92). This approach encourages the students to prepare well and makes teachers devote more time to opportunities for integrating and applying their knowledge, via a variety of student-centered, active learning strategies such as conducting research or working on projects with classmates. It also helps them to check on each student's understanding and, if necessary, helps them develop procedural fluency. Teachers can provide individualized support as students work through the activities designed to help them master the material, meeting them at their readiness level.

Even though, there is a big similarity among Flipped Learning and online, blended, and distance learning because of the screencast or video components, but, there are clear differences. In Online education, for example, the teacher cannot meet the students face –to-face and it usually occurs only remotely (Oblinger& Oblinger, 2005: 14-15). Virtual class meetings, assignments, and lectures happen online through a course management website usually, but not always, asynchronously. Sometimes the lectures and other activities are augmented by group chats or other means of facilitating collaboration and peer instruction. Blended classes also have an online element that usually occurs during class time along with direct student-teacher contact (Allen, Seaman, & Garrett, 2007:19). Students' experiences in face-to-face sessions vary, however, and are not necessarily different from what occurs in a traditional classroom, which is also the case in some flipped classrooms. Implementation of this approach does not mean that anything different will occur during class time. However, due to the emphasis on students becoming the agents of their own learning rather than the object of instruction, the Flipped Learning model can enable educators to make the shift from teacher-driven instruction to student-centered learning.

2.1 The 4 Pillars of Flipped Learning are …
- **F**lexible Environment
- **L**earning Culture
- **I**ntentional Content
- **P**rofessional Educator

For each of these pillars, 2 or 3 characteristics or indicators for effective integration of each pillar were provided. These indicators are worth exploring. An opportunity for educators to improve on how they reach and interact with their students is offered by each one of these characteristics of effective teaching. Below I have listed each of these indicators, along with some explanatory notes.

2.1.1 Flexible Environment

A variety of learning modes is allowed by Flipped classrooms; the accommodation of the lesson or unit, which might involve group work, independent study, research, performance, and evaluation, is an objective which is drawn by educators who physically rearrange their learning space to achieve this objective. Flexible environments are created where students choose when and where they learn. Flipped educators admit that this approach has its own defect because in-class time there will be somewhat chaos and noise, as compared with the quiet typical of a well-behaved class during a lecture. Furthermore, educators who flip their classes are flexible in their expectations of student timelines for learning and how students are assessed. Appropriate assessment systems that objectively measure understanding in a way that is meaningful for the students and the teacher are built by educators.

2.1.2 Learning Culture

In the traditional teacher-centered model, the teacher is the main source of information; the teacher is the "sage on the stage" (King, 1993: 30-35.), i.e. the sole content expert who provides information to students, generally via direct instruction lecture. In the Flipped Learning model, the situation is different because a deliberate shift from a teacher-centered classroom to a student centered approach is replaced, where in-class time is meant for exploring topics in greater depth and creating richer learning opportunities. Students are the center of learning instead of being the product of teaching, where they are actively involved in knowledge formation through opportunities to participate in and evaluate their learning in a manner that is personally meaningful. Students can theoretically pace their learning by reviewing content outside the group learning space, and teachers' task is to maximize the use of face-to-face classroom interactions to check for and ensure student understanding and synthesis of the material. Flipped educators encourage students to explore topics in greater depth depending on student-centered pedagogies aimed at their readiness level or zone of proximal development, where they are challenged but not so much so that they are demoralized (Vygotsky, 1978:4).

2.1.3 Intentional Content

The intentional content means the intentional event which is the way in which one and especially, and in accordance with this study, the teacher thinks about or presents to herself/himself the intentional object. That is to say, a teacher will not just think about an intentional object simpliciter; but

the teacher always thinks of the object (normally his students) or experiences it from a certain perspective and as being a certain way or as being a certain kind of thing. In this case, intentional content is of many types:

2. I.3.1 The priority is given to concepts used in direct instruction for learners to access on their own.

Which content Flipped educators need to teach directly is evaluated, since lectures are an effective tool for teaching particular skills and concepts, and which materials students should explore first on their own, outside of the group learning space.

2. I.3.2 The creation of relevant content (typically videos) for my students.

Teachers record and narrate screencasts, create videos of themselves teaching, or curate video lessons from internet sites (think TED-Ed, the Khan Academy, and so on). These readily available materials are used by many educators when they start flipping their classroom, while others gradually resort to create videos content of their own, they can be re-used in future course offerings until they require updating.

2. I.3.3 I differentiate to make content accessible and relevant to all students

"Intentional content" is used by educators to maximize classroom time, and adopt various methods of instruction such as active learning strategies, peer instruction, problem-based learning, or mastery or Socratic methods. The adoption of these methods depends on grade level and subject matter, and student abilities. When possible, educators provide multiple resources for exploring new topics.

2. I.3.4 Professional Educator

In a Flipped Classroom, Professional Educators have an important role and often more demanding than in a traditional one because they continually observe their students, providing them with feedback relevant in the moment during class time, and assessing their work. Professional Educators are reflective in their practice; keep in touch with each other to improve their instruction. They are open-minded and they accept constructive criticism, and tolerate controlled chaos in their classrooms. While Professional Educators take on less visibly prominent roles in a flipped classroom, they remain the essential ingredient that enables Flipped Learning to occur.

2. I.3.5 I make myself available to all students for individual, small group and class feedback in real time as needed

In the Flipped Learning model, the role of skilled, professional educators is more important than ever, and often more demanding, than in the traditional model because the determination when and how to shift direct instruction from the group to the individual learning space is their

responsibility. They must determine how to maximize the valuable and limited face-to-face time they have with their students.

2. I.3.6 I conduct ongoing formative assessments during class time through observation and by recording data to inform future instruction.

Gojak (2012: Internet) noted that educators should not ask themselves whether to adopt the Flipped Learning model, but instead, they should utilize the affordances of the model to help students to gain conceptual understanding, and as well as procedural fluency when needed. During class, teachers assess student learning frequently through various means, and use this feedback to enhance instruction and bolster learning.

2.I.3.7 I collaborate and reflect with other educators and take responsibility for transforming my practice.

Professional Educators should keep in touch with each other to find out the possible ways by which they can improve their trade. The acceptance of constructive criticism is the best way by which they can modify and develop their tools. Flipped educators should model and demonstrate lifelong learning in their own practice, regularly looking for opportunities to improve their skill set.

3. Potential Advantages of Flipped Learning Style.

3.1. Students have more Control

In a flipped classroom, the focus is on the increased input of students and how to control over their own learning. Giving them short lectures at home, students become free to learn at their own pace. Students may read the lectures in the morning and resume the reading at night. They can write down the difficult questions they may have, and discuss them with their teachers and peers in class.

This approach gives students the opportunity to have more time to understand certain concepts depending on themselves without receiving immediate assistance from teachers and classmates. As a result, this does not only improve student achievement, but improves student behavior in class as well.

3.2. It Promotes Student-centered Learning and Collaboration

Having enough time, collaborative projects and discussions are used to master the intended skills. This style encourages students to participate actively and teach and learn concepts from each other with the guidance of their teachers. The students are able to own the knowledge and confidence of themselves by participation in the class. Furthermore, teachers are given the ability to identify errors in thinking or concept application, and are more available for one-to-one interaction.

3.3. Lessons and Content are more Accessible (provided there is tech access)

Students who miss class due to illness, sports, vacations or emergencies can catch up quickly depending on lectures available at all time online. This

process provides teachers with more flexibility when they themselves are sick and also eliminates make-up assignments.

3.4. Access = easier for Parents to see what is going on

Depending on this approach, parents are given 24/7 access to their student's video lectures. This makes them better prepared when attempting to help their students in their studies and give them insight into the quality of instruction their students are receiving.

3.5. It can be more efficient

Done properly, in a flipped classroom, kids can have more time to be kids because they will have more free time to play or doing academic practice.

4. Limitations and Criticisms

Critics mention that this approach has its own defects or drawbacks for both students and teachers. For students, students are from different socio-economic background, and thus access to computers or video-viewing technology outside of the school environment is not possible for all students. Therefore, the application of this model of instruction may put additional pressure on some families as they attempt to gain access to videos outside of school hours

Additionally, some students may face difficulty in the application of this approach due to their developing personal responsibility. In self-directed, home learning environment students who are not at the developmental stage required to keep on-task with independent learning may fall rapidly behind their peers

Others argue that the flipped classroom makes students spend much time in front of computer screens in an era where adolescents already spend too much time in front of computer screens. The length of videos is the plea upon which inverted models rely to win this challenge.

Additionally, delivering a lecture on videos has its drawbacks because students may not learn best by listening to a lecture, while watching instructional videos at home is still representative of a more traditional form of teaching. Critics argue that a constructivist approach would be more beneficial.

Additionally, teachers may face challenges with this model that requires increased preparation time because the creation of high quality videos requires teachers to contribute significant time and effort outside of regular teaching responsibilities. Navigation in computer technologies involved in the successful implementation of the inverted model requires additional funding to procure training for teachers to.

The answer to the question whether this approach is good or bad is not important, but the importance can be derived from the fact that this approach does not "teach to the test". However, a sizable portion of time preparing for state mandated testing is required which in turn interrupts the flipped classroom process.

5. Conclusion

The creation of opportunities to make thinking visible is one of the most important concepts in teaching. The support and encouragement can be provided by teachers to their students to be successful when they see their thinking. Teachers resort to use a thoughtful approach to have an amazing opportunity to gain insights into where students are struggling.

الملخص
استخدام شبكة تبادل الادوار في التعليم
بشرى نعمة راشد
بشرى سعدون النوري

يتم توفير محتوى المحاضرة للطلاب في المنزل من خلال الوسائل الإلكترونية واستخدام وقت الفصل في أنشطة التطبيق العملية من خلال طريقة تدريس تسمى الفصل الدراسي المقلوب. قد تكون هذه الطريقة مفيدة لتعليم معرفة القراءة والكتابة. تهدف هذه الدراسة إلى وصف العديد من خصائص شبكة التدريس الخاصة بالفصول الدراسية المقلوبة والإجابة على الأسئلة التالية: هل يعتبر التمايز والتعلم المستقل الذي يتم تحقيقه من خلال مفهوم الفصل المقلوب طريقة ناجحة أم لا؟ هل هذه الطريقة التي يشاهد بها الطلاب محاضرات بالفيديو للواجبات المنزلية وإكمال الواجبات المنزلية التقليدية في الفصل تزيد من فهم الطلاب؟ وهل يوفر التعلم المستقل للطلاب فرصة لإكمال العمل في الفصل بمساعدة المدرس وهذا يؤدي إلى تقليل عبء العمل والإجهاد في الفصل مع زيادة المعرفة بالمحتوى؟ من المفترض أن يتم استخدام أساليب مختلفة لتعلم الطلاب ويجب السماح لهم بإظهار الكفاءة بطرق مناسبة. يمكن أن تتجلى هذه الطرائق من خلال أساليب التعلم الحسية والبصرية والحسية والمنطقية والرياضية وأنماط التعلم.

الكلمات الأساسية: التعلم المقلوب ، التعليم المقلوب ، الفصل الدراسي ، الشبكة

References

Akinoglu, O. &Tandogan, R. (2006). "The effects of problem-based active learning in science education on student's academic achievement, attitude and concept learning". Eurasia Journal of Mathematics, Science & Technology, 3, 71-81.

Allen, I. E., Seaman, J., & Garrett, R. (2007). *Blending in: The extent and promise of blended education in the United States*. Sloan Consortium.

Ayers, P. (2006). "Using subjective measures to detect variations of intrinsic cognitive load within problems". Learning and Instruction, 16(5), 389-400.

Baker, Celia. (2012, November 25). "Flipped classrooms: Turning learning upside down: Trend of "flipping classrooms" helps teachers to personalize education". Deseret News. Retrieved from http:// www.deseretnews.com/article/765616415/Flipped-classrooms-Turning-learning-upside-down. html?pg=all

Bergmann, J. &Sams, A. (2012). "Flip Your Classroom: Reach Every Student in Every Class Every Day". International Society for Technology in Education. 36(4), 22-27.

Berrett, D. (2012, February 19). "How 'flipping' the classroom can improve the traditional lecture". The Chronicle of Higher Education. Retrieved from http://chronicle.com/article/How-Flipping-theClassroom/130857/

Bloom, B. S. (1984). "The 2 sigma problem: The search for methods of group instruction as effective as one to-one tutoring". Educational Researcher, 13(6), 4-16.

Chaplin S. (2009). "Assessment of the impact of case studies on student learning gains in an introductory biology course". J. College Science Teaching, 39, 72–79.

Child Trends. (2012). "Home Computer Access and Internet Use". Retrieved from Child Trend's website: http://www.childtrendsdatabank.org

Classroom Window and Flipped Learning Network. (2012). "Flipped Classrooms: Improved test scores and teacher satisfaction". Retrieved from Classroom Window website: http://classroomwindow.com/   flipped-classrooms-improved-test-scores-and-teacher-satisfaction/

Clintondale High School (2013). "About Clintondale High School". Retrieved from Clintondale High School's website: http://flippedhighschool.com/

Driscoll, Tom. (2012). "Flipped Learning and democratic Education: The Complete Report". Retreive from http:// www.flipped-history.com/2012/12/flipped-learning-democratic-education.html

Educause. Edu/ELI (2012). "7 things you should know about flipped classrooms". Retrieved from http://net.educause.edu/ir/library/pdf/ ELI7081.pdf.http://www.educause.edu/library/resources/7-things-you-should-know-about-flipped-classrooms

Frederickson, N., Reed, P., & Clifford, V. (2005). "Evaluating web-supported learning versus lecture-based teaching: Quantitative and qualitative perspectives". Kluwer Academic Publishers, 50(4), 645-664.

Freeman S., O'Connor E., Parks J. W., Cunningham M., Hurley D., Haak D., Dirks C., Wenderoth M. P. (2007). "Prescribed active learning increases performance in introductory biology". CBE Life Science Education, 6, 132–139.

Fulton, K. (2012, April). "Inside the flipped classroom". The Journal. Retrieved from http://thejournal.com/ articles/2012/04/11/the-flipped-classroom.aspx.

Gojak, L. (2012, October). "To Flip or Not to Flip: That is Not the Question!" National Council of Teachers of Mathematics. Retrieved from http://www.nctm.org/about/content.aspx?id=34585

Gorman, M. (2012, July 18). "Flipping the classroom...a goldmine of research and resources keep you on your feet". Retrieved from http://21centuryedtech.wordpress.com/

Green, G. (2012, July). "The Flipped Classroom and School Approach: Clintondale High School". Presented at the annual Building Learning Communities Education Conference, Boston, MA. Retrieved from http://2012.blcconference.com/documents/flipped-classroom-school-approach.pdf

Hake, R. (1998). "Interactive-engagement versus traditional methods: a six-thousand-student survey of mechanics test data for introductory physics courses". American Journal of Physics, 16, 64–74.

Johnson, L., & Renner, J. (2012). "Effect of the flipped classroom model on secondary computer applications course: student and teacher perceptions, questions and student achievement" (Doctoral Dissertation, University of Louisville).

King, A. (1993). "From Sage on the Stage to Guide on the Side." College Teaching: 41(1): 30-35. http://www.edweek.org/ew/articles/2012/10/03/06khan_ep.h32.html

Knight J. K., & Wood W. B. (2005). "Teaching more by lecturing less". Cell Biology Education, 4, 298–310.

Lochead, J., &Mestre, J. (1988). "From words to algebra: Mending misconceptions". In A. Coxford& A. Shulte (Eds.), The Ideas of Algebra, K-12 (1988) Year book of the National Council of Teachers of Mathematics, pp. 127-135).

Marshall, H. W. &De Capua, A. (in press). "Making the transition: Culturally responsive teaching for struggling language learners". University of Michigan Press: Ann Arbor, MI.

Mayer, R. E. (2009). "Learning and Instruction". Pearson/ Merrill/ Prentice Hall: Upper Saddle River, New Jersey.

Mazur, E. (1996). "Peer Instruction: A User's Manual". Addison Wesley: Boston, New Jersey. Harvard University press.

Michael, J. (2006). "Where's the evidence that active learning works?" Advances Physiology Education, 30, 159–167.

Musallam, R. (2010). "The effects of screen casting as a multimedia pre-training tool to manage the intrinsic load of chemical equilibrium instruction for advanced high school chemistry students" (Doctoral Dissertation). University of San Francisco, http://ramseymusallam.com/resources/Dissertation.musallam.pdf.

O'Dowd, D. K., & Aguilar-Roca, N. (2009). "Garage demos: using physical models to illustrate dynamic aspects of microscopic biological processes". CBE Life Science Education, 8, 118–122.

Papadapoulos, C. & Roman, A. S. (2010). "Implementing an inverted classroom model in engineering statistics: Initial results". American Society for Engineering Statistics. Proceedings of the 40th ASEE/IEEE Frontiers in Education Conference ,Washington, DC, October 2010.

Pearson & The Flipped Learning Network (2013). "Flipped Learning Professional Development". Retrieved from http://www.pearsonschool.com/flippedlearning

Prince, M. (2004). "Does Active Learning Work? A Review of the Research". Journal of Engineering Education, 93, 223-231.

Project Tomorrow. (2013). "Speak Up Survey". Retrieved from http://www.tomorrow.org/speakup/

Reston, VA: National Council of Teachers of Mathematics. Marshall, H. W. (2013). "Three reasons to flip your classroom". Retrieved from http://www.slideshare.net/lainemarsh/3-reasons-to-flip-tesol-2013-32113

Southern California Public Radio (Producer). (2013). "Can flipping the classroom fix the educational system?" [Audio Podcast]. Retrieved from http://www.scpr.org/programs/airtalk/2013/02/20/30599/can-flipping-the-classroom-fix-the-educational-sys/

Stillwater Area Public Schools. (2012). "The Flipped Classroom". Retrieved from http://www.stillwater.k12.   mn.us/departments/technology/technology-around-district/flipped-classroom

Strayer, J. (2012). "How learning in an inverted classroom influences cooperation, innovation and task Orientation". Learning Environments, 15(2), 171.

Stumpenhorst, J. (2012). "Not Flipping for Flipped". Retrieved from http://stumpteacher.blogspot.com/2012/12/not-flipping-for-flipped.html

University of Minnesota Center for Teaching and Learning. (2008). "What is Active Learning?" Retrieved from http://www1.umn.edu/ohr/teachlearn/tutorials/active/what/index.html

Vygotsky, L. S. (1978) "Mind in society: The development of higher psychological processes". Harvard University Press: Cambridge, MA.

Walsh, K. (2010). "About Emerging Education and Instructional Technologies and Sharing the Learning Journey". Retrieved from http://www.emergingedtech.com\about

Warter-Perez and Dong, Jianyu. (2012). "Flipping the classroom: How to embed inquiry and design projects into a digital engineering lecture". Paper presented at ASEE PSW Section Conference, California Polytechnic State University, San Luis Obispo.