



ENHANCING THE 21ST CENTURY LEARNING THROUGH THE FLIPPED CLASSROOM APPROACH: A SCIENCE TEACHER'S PERSPECTIVES

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Author's Biography



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Research Highlights

A flip classroom is closely related to the inverted classroom that promotes learning outside the classroom (Lage et al., 2000). The main reason for the implementation of the flipped classroom is to free up the allotted learning time at school so that more engaging activities could be done (Milman, 2014). Since the flipped classroom is still at its early phase in Malaysia, there are limited studies done in this area (A. Rahman, Abdullah, Mohammed, Mohd Zaid, & Aris, 2014). This preliminary study reveals three issues in 21st-century learning experience via primary science flipped classroom implementations including the affordances, assistance and challenges. There are various aspects taken into consideration from the teacher and teaching surrounding for the flipped classroom settings to be conducive. The teacher realized that although flipped classroom helped her in some ways nonetheless there are challenges that she has to resolve.

Graphical Abstract

Fig. 1 shows an overview of the emerged themes. Every theme was produced based on the categories recorded through the ATLAS.ti software. Furthermore in figure 2, each theme associate on each other in term of what affecting others. It is noticed that the affordance could affect the assistance whereas the challenges could affect both the affordances and also the assistance.

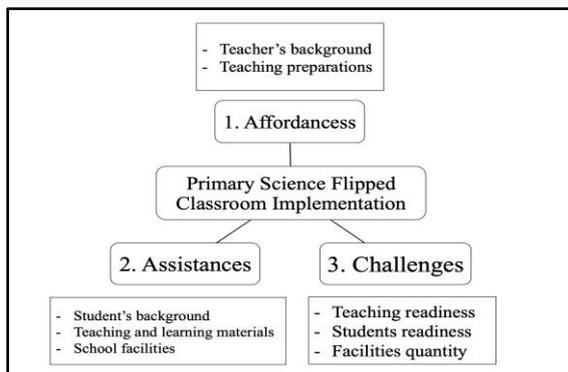


Fig. 1: The overview of the emergent themes

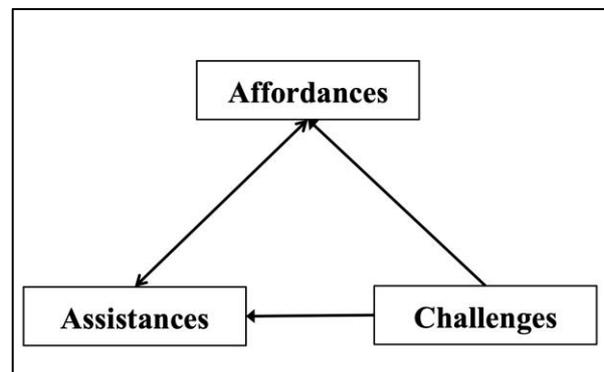


Fig. 2: The associations of the themes

Research Objectives

The research question that had been examined in this study is, what is the teacher's perception of enhancing 21st-century learning in primary science subject via flip classroom approach implementation?

Methodology

In this case study, purposive sampling is used in a qualitative way to an emphasis on the views of those who are known to encounter a similar phenomenal experience (Groenewald, 2004). A primary school science teacher was elected purposely as a sample from one district in Sabah. This teacher is majoring in Science, had a very well knowledgeable about Science teaching with the title of "Lead primary science teacher", applied the FC approach in her teaching sessions and a minimum of ten years in service. This selection was supported by advice from professional authorities (Gomez-Zwiep, 2008). Based on the research question,





the data is collected through observations and semi-structured interviews. The step of data collection was recorded as in Table 1.

Table 1:The sessions involved in the study.

Session	Activity	Setting
1	First meeting with the selected teacher	Date and time (1) at selected place
2	First Interview session	Date and time (2) at the same place
3	Observation session	Date and time (3) at the same place
4	Second Interview session	Date and time (4) at the same place
5	Analysing related document	Date and time (5) at the same place

The data collection in this research was conducted to discover who, what, and how about the situation (Handcock, Ockleford, & Windridge, 2009). All of the data were collected using the semi-structured interview, participant observation and document review on teacher's and student's work samples. The researcher will use the interview at the beginning and at the end of the research period. In the same time, an observation session and document review (Creswell, 2013) process were conducted. The data collection methods were used in different time to triangulate the findings.

Results

The result indicates that there are three themes supported the implementation of primary science flipped classroom to promote 21st-century learning. Based on the teacher's perspectives teaching affordances, learning assistance and challenges are the themes through her experience teaching science via a flipped classroom approach. On every theme, there are some emergent aspects that had contributed to the themes. It is detected that the affordance could affect the assistance whereas the challenges could affect both the affordances and also the assistance. The affordances are the capability or quality that the teacher and the learner already have. The assists are the capableness or quality that was equipped by the teaching and learning settings. In other words, the affordance that is inner learning capability could support the assistance that is the outer learning capability or quality. The other way round, the assistance could also support the affordance. Meanwhile, both the inner and outer learning's capability will be affected by the related challenges that were mentioned earlier. Generally, a teacher should have the flexibility in planning the learning session, concern to explore a new way of teaching, and positive thinking are crucial factors to face the challenges.

Findings

The teacher plays an important role as a mastermind on what will the learner's learn and under what circumstance the learning activity will happen. Agreeing to (Lehtinen & Viiri, 2017). The teacher is the primary source of guidance and at the same time should aware if all sources of guidance compliment with the learners' needs. Appropriate monitoring from the teacher, parents, and peers is important to assist in effective flipped classroom learning. This also ensures that the learning could be initiated by the children's interaction with the learning environment (Kozulin, 2002). In a group activity, group leaders need to be trained to facilitate group members in completing any learning activity. As for the learners, receiving teacher's minimal guidance as in (Koole & Elbers, 2014) would allow them to get familiar and be able to have a good 21st-century learning experience in learning science using the FC approach.





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