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Flipping the classroom for information literacy instruction: considerations towards personalisation and collaborative learning

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Abstract

This study examined the possibility of enabling personalised, collaborative information literacy (IL) instruction through a flipped class model. Two-stage interviews were conducted before and after a pilot project was given to participants, which was designed according to guiding principles of personalised learning and online collaborative learning (OCL) theory. The study used a qualitative framework to gauge learners' perceptions regarding the effectiveness and feasibility of the design. Samples were taken from learners who had previously been involved in a flipped classroom. The data collected from the two-stage interviews were compared and further discussed in light of Giorgi's (1999) understanding of learning through a phenomenological perspective. Five participants were involved in the study. For the first-stage interviews, the five participants all responded positively towards the prospectus of a flipped, personalised and collaborative IL instruction. For the second-stage interviews, three participants offered feedback regarding an interactive PowerPoint specifically designed for a flipped IL instruction, which had incorporated elements of personalisation and group activities. All three participants in the second stage interviews spoke favourably of the content of the interactive PowerPoint, but they also all exhibited a degree of hesitation when multiple options were presented to them. They were still expecting clear instructions instead of taking control of the process. This study discovered a gap between learners' positivity towards a flipped, personalised and collaborative learning model, and the fact that learners are fundamentally accustomed to traditional learning paths. This implies there are hurdles to overcome before the flipped model can deliver results, especially when learners are expected to take more control over their own learning. Further research is needed to explore ways of altering learner mind sets in order to enable learners to embrace the full potential of flipped learning.

Keywords

Academic libraries; flipped classroom; information literacy; New Zealand; online collaborative learning theory; personalised learning; phenomenological study

1. Introduction

Information literacy (IL) instruction is traditionally taught by librarians through face-to-face sessions. Concerns have been raised over the years regarding the lack of interest from students, as well as students' poor learning outcomes. For IL instruction, the class size is typically large and students are from diverse disciplines. It is very hard, therefore, to provide detailed, pertinent guidance for each individual student. With regard to this dilemma, some research argues for better implementation of pedagogic strategies in IL instruction, and some research devises new class models to integrate critical thinking skills that are more suited to the new trend of self-directed, inquiry-based learning (Hepworth & Walton, 2009).

This study is inspired by emerging research and practice on the flipped teaching method, along with new expectations regarding personalised learning strategy. The purpose of this study is to utilise recent developments in online learning strategies and theories to enrich a flipped classroom model and to inform pedagogical decisions in flipped IL instructions. This study focuses specifically on two aspects of the flipped classroom: firstly on students' attitudes towards the flipped method in general, and secondly on their response to a set pre-class learning tool with personalised and active elements.

2. Theoretical background

2.1 Key notions

The two key notions used in this study are personalised learning and online collaborative learning (OCL) theory, which provide the theoretical framework for exploring new opportunities presented in an online learning environment.

Personalisation is rooted in marketing theory and places its primary focus on customer satisfaction. It involves the pedagogical task of informing the customer of available options and invites 'co-production' from the consumer to forge a long-lasting relationship. Personalisation in education is user centred and tailored to suit users' information needs and existing information behaviour (Hartley, 2008). Current research expresses enthusiasm towards personalised learning strategies in higher education. Ubiquitous learning spaces, seamless learning, digital citizenship, learner engagement, and learning-oriented assessment as well as lifelong and life-wide learning are envisaged as defining features of personalised learning (Keppell, 2014). Extensive use of Web 2.0 tools and strategies are deemed essential for the design of a personalised learning environment (McLoughlin & Lee, 2010). Challenges faced by the personalised learner include: inadequate on-site pedagogical and psychological support, a lack of assistance and measures for evaluating learning materials, and a lack of channels for offering feedback (Magoulas & Chen, 2006). To date, however, there is little research that addresses the pedagogical forms and implications of personalised learning, which is of significant importance to the development and improvement of personalised learning.

OCL theory advocates collaborative learning and knowledge building mediated by the Internet. It reflects a conceptual change in teaching and learning in the twenty-first century in response to new learning opportunities and challenges in the Knowledge Age. While knowledge was viewed as absolute, unchanging, and an individualist pursuit in the twentieth century, the Knowledge Age in the twenty-first century defines knowledge as not only dynamic and evolving but also in the form of innovation and collaboration. OCL theory devises an online learning model that encourages and supports students in the knowledge building/construction process, where learning is achieved through conceptual change mediated by the knowledge community (Harasim, 2012).

This study intends to apply and test salient elements of both personalised learning and OCL theory through a purposely designed pre-class PowerPoint.

2.2 Analytical framework

Amedeo Giorgi exemplifies a case of 'qualitative analytic perspectives applied to the area of learning' (Giorgi, 1999, p.68), which provides a framework for this study to conduct data analysis and grasp the essences of flipped learning through a phenomenological perspective. First, as Giorgi asserts, 'An important condition for learning is that mediation has to take place [...] Behavior or experience has to be guided to an adequate understanding in order for

situations in the world to be met competently' (Giorgi, 1999, p.81). This highlights the importance of learner preparation, which not only includes the view of transfer of knowledge, but also may include a change of perspective and mind set.

Second, Giorgi points out that a key element in facilitating learning is 'not so much hearing the content of students' questions as hearing where they are vis-a-vis what has to be learned and speaking to that existential place and leading the person forward from that place' (Giorgi, 1999, p.85). This highlights the importance of recognising the different learning stages for individual learners, which should not be confused with question-and-answer sessions between teachers and students. This brings to attention issues regarding timely and appropriate support for flipped learning scenarios.

Third, Giorgi emphasises risk taking in learning and the crucial importance that learners 'come up with their own intuitions and insights on the basis of their own active search [...]. The implication for the learning facilitator in this case is that he or she should try to create space for the learner to gain or develop his or her own intuitions' (Giorgi, 1999, p.85). This also has vast implications for flipped learning in terms of facilitating self-guided learning opportunities and encouraging experimental learning.

3. Literature review

3.1 Flipped learning in higher education

Flipped classroom is a new model of course delivery that emerged around 2005 from Salman Khan (Plunkett, 2014). In this model, course materials are delivered beforehand, while the classroom is used as a venue for answering inquiries (Loo et al., 2016). The purpose of flipped classroom methodology is to motivate students to engage actively with course content and to improve interactions between students and academic staff so that deeper learning happens (Rotellar & Cain, 2016).

Cases of success have been reported in the education sector where a flipped classroom was used (Gannod, Burge, & Helmick, 2008). Advantages of this teaching model were cited as better use of class time, more chances for active learning, improved one-on-one interaction in the process of teaching, and, most importantly, students taking charge of the learning process (Lage, Platt, & Treglia, 2000; Schullery, Reck, & Schullery, 2011).

In 2015, O'Flaherty and Phillips conducted a scoping review of the literature concerning the flipped classroom in higher education, in which the authors expressed concerns regarding the lack of a scientific, robust approach in evaluating respective learning outcomes despite the majority of articles that reported favourably on the flipped model. O'Flaherty and Phillips acknowledge the vast potential of the flipped classroom but determine that there is as yet no concrete evidence to show that a flipped model is more effective than the traditional teaching model. The authors caution against rushing into the flipped model without exploring the pedagogy of the flipped classroom.

Echoing O'Flaherty and Phillips' caution, Rotellar and Cain (2016) assert that the flipped classroom should be handled more carefully and they stress the importance of execution and implementation of the flipped method. The authors argue that more consideration should be given to the specific educational environment: for example, the class size, the human resources, and the technological capacity as well as the student composition – and that the flipped classroom should be designed individually according to different circumstances.

3.2 Flipped learning model in IL instruction

Research on flipped information instruction is still in its early stage. Arnold-Garza is a pioneer advocate for the implementation of the flipped method in the library sector. Arnold-Garza (2014) perceives improved learning outcomes acquired through better student engagement and better support of students' diverse needs. She argues that features of a flipped classroom echo the principles of IL instruction, as specified in the Association of College and Research Libraries' *Characteristics of Programs of Information Literacy that Illustrate Best Practices: a Guideline* (ACRL, 2012). Support of diversity and collaboration, use of technology, and activities responding to real-world needs are clearly present in the guideline, as well as in mentioned advantages of the flipped classroom. Arnold-Garza calls for more experiments in the flipped classroom model in library instructions but expresses concern over the lack of measurement for designated learning outcomes.

Current literature has responded to Arnold-Garza's directional research hypothesis. The below is a list of research of particular importance to this study.

3.2.1 Support of diverse/personalised learning needs in flipped IL instruction

Loo et al. (2016) present five cases of flipped IL instructions in different forms: a one-shot instructional session for a large interdisciplinary undergraduate course, a one-shot graduate orientation seminar, an embedded librarian in a graduate research seminar, a real-time online graduate course, and a hybrid online and in-person instructional program. Their study aims to provide direction in devising a mode of flipped IL instruction facing the diversity of disciplines and audiences. Based around two core elements (assigning pre-class assignments and increasing active learning techniques), the study devises a framework composed of catalysts, building blocks, and instructional outcomes. The proposed framework outlines the variety of motivations behind flipped instruction, some fundamentals that could be integrated into the design of flipped instruction, and the perceived outcome of the application of this paradigm.

Rivera (2015) also acknowledges the importance of catering to students' diverse learning needs. In implementing student-centred activities in the flipped classroom, Rivera prescribes dedicated time for answering individual student inquiries and for assisting students with their assignments, as well as for giving students opportunities to help each other. In addition, Rivera recognises an added benefit of the flipped classroom: students coming from non-English-speaking countries have the chance to review the pre-class video and pause the video to ask questions. This can be particularly important in environments where there is a high number of students from non-English-speaking countries.

3.2.2 Collaborative and active learning: regarding learner engagement and accountability

In addition to catering to diverse learning needs, both Loo et al and Rivera speak positively about active and collaborative learning techniques (mainly facilitated through interactive, practical classroom engagement and group activities), which are still cautiously debated in the field. Cohen, Poggiali, Lehner-Quam, Wright, and West (2016) found that a well-executed lecture was no less effective than active learning according to pre- and post-test scores. But pre-class IL homework (closely related to course assignments) gained high completion rates, and students were much better prepared for one-shot IL instruction, which could have the benefit of transferring 'higher-order thinking into the classroom' (Cohen et al., 2016, p.50). Goates, Nelson, and Frost (2017) discovered that students in the non-flipped class performed significantly better in developing searching statements than the flipped class, which might have been caused by the lapse between video viewing and performance of search for the flipped group. Meanwhile, there was no control over students' level of concentration outside class time. These shortcomings could be addressed by establishing students' accountability outside class time and closer ties between pre-class material and in-class activities.

Goates et al. (2017) suggest a more diversified approach for flipped IL instruction, where strengths of both the traditional lecture model and flipped model can be incorporated: the better, face-to-face demonstration from the traditional model and the more hands-on practice and individual help from the flipped model all scored high in students' preference responses. Contrary to the studies above, Kurbanoglu and Akkoyunlu (2016) report a successful case of flipped IL instruction, where three main components were carefully designed: videos were made to create an online learning environment, contact sessions were used for group activities and individual guidance, and a Facebook group was formed to provide learning support and communication. Although Kurbanoglu and Akkoyunlu warned that a flipped class model is not for everyone, the students involved were reportedly pleased with the flexibility of the course, more question time, less homework, more support, and, most importantly, more responsibility for their own learning. One main drawback is the lack of immediate feedback in an online learning environment.

3.2.3 Digital technology: improved flexibility vs added complexity

Kong (2014) explores digital classrooms in terms of their implication for a successful flipped classroom strategy. Kong attributes the flipped classroom boom to the advancement in digital technologies, which produces ubiquitous access to resources and a variety of channels of communication. According to Kong, flipped classrooms take advantage of new ICT technologies and reserve class time for constructive learning tasks of concept building instead of knowledge delivery. Kong especially investigates the impact of the digital classroom regarding acquiring IL competency and critical thinking skills amid the learning of domain knowledge. Kong employs pre- and post-tests to measure learning outcomes, with added test components for critical thinking skills, thus echoing Bloom's revised taxonomy (Anderson & Krathwohl, 2001). In addition, Kong conducts semi-structured interviews to determine the level of satisfaction from students and teachers. Kong's study indicates significant improvement in tests as the result of the flipped digital classroom, as well as positive feedback on the pedagogical designs. Based on the positive outcome of this experiment, Kong insists on the critical role of question design for the success of guided activity worksheets and the importance of integrating IL competency and critical thinking skills into learning of domain knowledge.

Rather than stress the importance of technology, as in the aforementioned research, Lemmer (2013) exhibits caution around the use of technology. Lemmer asserts that it is important that the use of technology is determined by pedagogical goals, and that e-learning strategies and tools should only be used when it supports learning objectives and outcomes. The blended model, as indicated by Lemmer, has been proven the most effective: the combination of e-learning and face-to-face instruction has the advantages of increased student satisfaction, deeper learning experiences, and the added benefit that teacher and students are relatively equally positioned in the course of learning due to the asynchronous nature of the medium.

Lemmer's view on the role of technology in the flipped classroom is echoed by other research. That is, technology is utilised to serve the purposes of teaching, but not the other way around. Consequently, the issue of how to best utilise technology, such as how to make and where to place instruction videos, has begun to attract researchers' attention. Carroll, Tchangalova and Harrington (2016) report on an experiment on embedding IL instruction modules into a course page, customised by teaching staff and completed online by students.

Obradovich, Canuel, and Duffy (2015) also take interest in the use of videos in flipped IL instruction. The authors conducted a survey on around 140 research libraries across Canada that have instructional videos embedded in their websites, and identified key aspects to be considered amid the production of a video used in the flipped IL instruction. These key aspects included customised content and multiple formats, easy access to the video, the ability to keep the video updated, and finally a connection between instructional video and proposed activity in the flipped classroom.

3.2.4 Expectations for future research

To date, scant research has been devoted to exploring viable structure and effective elements for the design of a flipped classroom (Rotellar & Cain, 2016).

Researchers have also expressed concerns over the lack of data with regard to learner perceptions (Loo et al., 2016; Rodriguez, 2016). In his 2017 study concerning a flipped freshman (first year undergraduate) English library instruction, Rivera did not find the expected success, and suspected that this was caused by students' unfamiliarity with the flipped class model (Rivera, 2017).

This study introduces key notions in personalised learning and OCL theory so as to better understand flipped IL instruction. The notions utilised in the discussion are personalised learning environment, knowledge community, and knowledge building. These notions guide the design of the interviews amid the testing of viable elements against learner perceptions.

4. Research questions

What are learners' perceptions and expectations regarding the flipped teaching model? What can be learned from a learner's response to a pre-class PowerPoint with personalised and active elements?

5. Methodology and methods

5.1 Methodology

This project uses a qualitative research approach based on considerations of the nature and purpose of the research.

Qualitative research is 'typically used for providing an in-depth understanding of the research issues that embraces the perspectives of the study population and the context in which they live' (Hennink, Bailey, & Hutter, 2011). In this case, the research project relies heavily on students' experiences in the flipped classroom and invites their perspectives and personal opinions. The depth of their feelings and understanding will be of great significance to the quality of the research. Compared with the rigid structure and fixed expectations of quantitative research, qualitative research is able to provide the level of flexibility and comprehensiveness expected for the research.

Second, '[q]ualitative research is useful for exploring new topics or understanding complex issues' (Hennink et al., 2011). In this case, the literature is minimal regarding the pedagogical principles of the flipped class model. The implications are that there are few analytical frameworks readily available, and the researcher is expected to draw from first-hand experiences in a natural setting, where a qualitative method is more suitable. In addition, it is expected that the researcher creates questions that reflect the essence and complexity of the issue to gain deeper understanding of the new topic, which suits a qualitative method.

Third, 'qualitative research is most suitable for addressing "why" questions to explain and understand issues or "how" questions that describe processes or behaviour' (Hennink et al., 2011). The aim of this study is to explore how to utilise notions from personalised learning and OCL theory in the development of pedagogy in order to improve the flipped IL instruction. This means the research cannot be accomplished through asking yes or no questions. It is crucial that the questions asked reflect individual perspectives and rationales – and that students'

perceptions are recorded comprehensively and faithfully. Therefore, a qualitative research approach is needed to collect rich data and gain in-depth understanding of the situation.

5.2 Research design

This study is designed to probe learners' perceptions about the flipped teaching method as a whole, with a specific task of testing a pre-class PowerPoint with personalised and active elements which is to be used in a flipped IL instruction.

Phenomenology studies/places primary focus on lived experience and rejects the view that the reality is something separate from the person (Valle, King, & Halling, 1989). Husserl proposed the study of phenomena as they appeared through consciousness, so as to eliminate mind-body dualism. Husserl views the comprehension of 'essence' (the ultimate structures of consciousness that become clear in the process of phenomenological research) as an intentional grasp of a phenomenon, but not a matter of generalisation. Therefore, it is crucial that researchers develop description of particular realities whilst bracketing out the outer world as well as individual preconceptions (Lavery, 2003).

Free (imaginative) variation is a method to examine how a particular phenomenon is presented to the consciousness of the researcher. It requires the researcher to consider the phenomenon from a range of different perspectives in order to reveal its essential, unvarying aspects (Husserl, 1936/1970; Turley, Monro, & King, 2016).

As a phenomenological study, this research brings in as many different perspectives as possible about flipped learning through imaginative variation: following Amedeo Giorgi's instruction, the study starts with faithful recording of conversations with various participants regarding their personal experiences so that '[t]he descriptive step becomes a detailed concrete description of specific experiences from an everyday attitude from others' (Giorgi, 1997, p.243). At the same time, the study deliberately chooses participants from different backgrounds to fully explore the features of this phenomenon.

This study seeks to 'obtain the typical essence or structure of a range of experiences' (Giorgi, 1999, p.87). This is achieved through phenomenological reduction: after the initial step involving free (imaginative) variation, the study conducts intentional analysis (this is when the mind is directed towards objects of study, according to Husserl), which leads to descriptions of the essence of the phenomena and how the individual experience is constructed (Dowling, 2007). The individual experiences are subsequently compared with elements from personalised learning and OCL theory.

To fully understand the essences presented, and to test the initial data, this study engages participants for the second time with a pre-class PowerPoint project designed for flipped IL instruction to gauge further responses.

This study identifies gaps between the design principles of the PowerPoint and participants' reactions so as to discover issues that could improve/hinder the success of flipped IL instruction.

As a researcher, I follow guidelines of traditional phenomenology (Creswell, 1998, pp.81-82) and take steps to ensure the validity of data collected.

First, I consciously bracket out my personal experiences from the research.

Second, I organise a two-stage interview to collect data. The first stage of the interview is aimed at gauging perceptions of the flipped IL instruction in general, which produces key elements

deemed as important in flipped IL instruction. Interview questions at this stage are general; later I ask more specific questions concerning notions from personalised learning and OCL theory. The second-stage interview is based on the responses gathered from the first-stage interview. A prototype PowerPoint is developed prior to the second-stage interview, which reflects a preliminary design of a flipped IL instruction. Without specific interview questions, I simply ask for voluntary feedback through email response.

Third, I make conclusions from the two-stage interviews and identify themes.

Fourth, I write a description of these themes.

Fifth, I write a composite description to present the essence of the phenomenon being studied.

5.3 Population and sample

This study engages learners who have been previously exposed to a flipped classroom model. The original design of this research was to invite students currently studying at University of Auckland. But I then determined that, in modern society, learning is life long and ongoing, and it would therefore be best not to limit my investigation to university campuses. I've since expanded my sampling to the general public and approached potential candidates through advertisements and direct invitations.

As a phenomenological study, the aim of this research is to engage participants with imaginative variation. Namely, the participants provide individual experiences that constitute different perspectives and convey the essence of the phenomenon under study. This is the reason why the diversity of embodied experiences is of particular importance in this study. Gender, age, levels of education, and regional and cultural diversity were taken into consideration when the interviewees were selected.

The difference in cultural background is deemed an important factor for the reason that the educational systems between Asian countries and Western countries are very different, which could result in different expectations in terms of class model and pedagogical design. Even though all participants resided in New Zealand at the time of the interviews, it was fortunate that three out of five participants had international perspectives: one participant from Germany, one participant from the Philippines and one participant from China.

Other factors taken into consideration are as follows: in terms of gender, age and life experience, I interviewed one female participant and one male participant who had just entered the workforce after graduation, two female participants who had a few years of working experience with ongoing/recently completed postgraduate study, and one male participant who had over ten years of working experience and two master's degrees. In terms of experiences with the flipped teaching model, two participants had taken part in the flipped classroom in high school, two participants had encountered flipped teaching during their postgraduate courses, and one had done so through language courses.

In addition to involving participants in face-to-face interviews, I briefly consulted with relevant staff members at University of Auckland regarding flipped teaching and AIL (academic IL instruction).

5.4 Data collection

Data was collected through two-stage interviews, and two different methods were used as appropriate for each stage. I conducted face-to-face interviews for the first stage of data collection, which facilitated the most direct communication and provided the richest data. Mostly

I initiated the conversation with questions, but I was happy to let the participants lead the discussion whenever possible. I asked for permission to record the interview at the beginning of each session. I asked participants if they would like a copy of the transcript of the interview at the end of each session. A couple of participants expressed interest in getting further updates about this research.

For the second-stage interview, I initiated the interviews through emails. I asked for any ideas that sprang to their minds and a few sentences that best described their thoughts. As the PowerPoint used for the second-stage interviews was developed based upon results from the first-stage interviews, I did not include more participants even when one participant declined further contact after the first-stage interview. This, I believe, maintained the consistency of the data collected and the veracity of the process.

5.5 Data analysis

For data collected from the first-stage interviews, I took three steps to conduct data analysis:

First, I wrote a brief composition for each of the interviews conducted. This included the process of transcription and a truthful yet precise recount of the interviews.

Second, I searched for keywords within each recorded interview and identified the essence presented in the session. Each recorded interview reflected the interviewee's natural response to the concerned topic, but the responses were rather repetitive and disorganised. I hence grasped the most frequently used words spoken by each participant and tried to comprehend his/her perspective. Then I discovered the deep meaning behind the expressions used, and invariant structures (essence according to Husserl) throughout the interviews.

Third, I categorised and summarised the data collected. This included a process of comparison and evaluation of the essence drawn from the second step of the data analysis, which is noted in Table 1.

The second-stage data was acquired through emails, which I carefully examined and compared to the results from the first-stage interviews. I then discovered disparities between the results from the first and second stages. I made some preliminary remarks on these disparities.

To further examine the implications of the findings above, I adopted Amedeo Giorgi's phenomenological method, especially his 'qualitative analytic perspectives applied to the area of learning' (Giorgi, 1999, p.68). His discourse on the 'mediation' taking place during learning, risk taking, and the learner's own space and stages of learning, are utilised to further interpret the data collected.

5.6 Ethical considerations

I applied to the School of Information Management Human Ethics Committee at Victoria University of Wellington for approval to conduct this research. My application was approved and later ratified by the University of Auckland Human Participants Ethics Committee.

6. Results

Five interviewees for the first-stage interview had experienced the flipped teaching method; four of them were interested in the next stage of the interview; three of them responded to my preliminary design of flipped IL instruction with feedback.

6.1 Summary of the results of the first-stage interview

All five participants indicated positivity toward the flipped class model but showed very different perspectives. The participants were first asked about their general impression of the flipped learning model. All of them answered with their own unique choices of terms and phrases. These terms and phrases were reiterated throughout the interviews, even though the questions being asked were different. Here are the keywords most used by the five participants:

Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Organised	Open	Research	Student led	Challenging

When the participants were asked for more details of their experiences and preferences in the flipped classroom, they displayed relatively similar positivity and expectations. All of them regarded the integration of new technology into flipped teaching as inevitable, even though only three of them had experienced technology-aided instruction; all of them enjoyed collaborative team learning and group discussions:

I get information from all three [teacher, fellow students, teaching materials prepared by the teacher] that you said. I think teacher and fellow students they are both equally important as each other, as fellow students can have really good ideas. And teacher can guide all of you into what you are learning.

Enjoy collaboration. Like team building. Because you work together. You can see other people's points of view, you have to argue your points of view. And you as well as others will change points of view and that is progress.

Furthermore, all of them agreed they had more control in the flipped learning model, albeit to different extents.

All of them wanted to see personalised content for IL instruction, albeit with different levels of enthusiasm:

I think it [personalised IL instruction] would be beneficial. Maybe ask me some questions beforehand and kind of being able to judge exactly what I am interested in and what kind of I would use and stuff like that. And then telling me more about what is specific to me.

I hope there will be more personalised classes. In the future, learning will be more personalised. Course contents need to be more customised, delivery model can also be more customised.

I am quite tech literate and capable of finding things by myself. But I think there should be opportunities for it to be presented in different ways, to play on different people's strengths and weaknesses. [...] For example, to learn how to search catalogue, I might like printed materials, but other people may prefer face to face discussion [...].

Three out of five expressed interest in the notion of knowledge building:

Knowledge building, yes. I think it is a good point. There are many ways of teaching, you don't have to learn in a particular way. Teachers are more like mentors. You go to the teacher when you have questions, but not like he is giving you all and that

everything he knows is true. Opinions that are different from teacher's are good as well.

Sounds correct. My interpretation of that is sort of the teacher is there to facilitate, bring the students into the knowledge. And they [students] develop their own knowledge and skills from there [...]. It is more so in a flipped classroom.

Four out of five believed teachers were more helpful in the flipped mode, especially with regard to providing more targeted guidance, and three out of five wanted to see new methods of assessment.

Overall, the participants each showed similar understanding of the connotations conveyed through the interview questions directed to them, with only one concept resulting in very different types of understanding: the sense of control. Here are the different interpretations mentioned: *'Be more responsible for your learning'*; *'you have options to choose from [the way you learn]. You can pursue your own capabilities'*; *'go back to the material whenever I want to'*; *'direct the directions of the discussion'*; *'control the pace of your learning'*.

In addition to the responses given to the interview questions, the majority of participants also mentioned that deep learning had occurred as a result of the flipped learning model. They also raised the issue that the flipped class model is new and that efforts are needed to develop and improve it further, as well as to advocate for it and to make it a good option for learners.

Table 1: Feedback from first-stage interviews

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
General Impression	Feel prepared think deeply organised	More open more choices	Prepared self research ask questions	Helpful student led deep learning	New refreshing challenging
Use of Technology Past/future	Yes/Yes	Yes/Yes	Yes/Yes	No/Yes	No/Yes
Elements of Convenience Past/future	Yes/Yes	Yes/Yes	Yes/Yes	No/Could Work	No/Yes
Sense of Control	Yes	Yes	Yes	A little bit	Yes
Personalised IL Instruction	Yes	Yes	Yes	Depends	Yes
Knowledge Building	Not mentioned	Yes	Not mentioned	Yes	Yes
Teacher More Helpful	No	Yes	Yes	Yes	Yes
Collaborative Teamwork	Yes	Yes	Yes	Yes	Yes
New Method in Assessment	Not mentioned	Yes	Yes	Not mentioned	Yes
Deep Learning	Yes	Yes	Not mentioned	Yes	Yes
Like Flipped Model	Yes	Yes	Yes	Yes	Yes

6.2 Summary of the results of the second-stage interview

In the second stage of the interview, participants were invited to preview a pre-class PowerPoint and give feedback. The PowerPoint integrated the elements that were discussed during the first-stage interviews. The intention of the PowerPoint was to utilise elements deemed as viable by the participants and further examine their feasibility in the form of class designs. Meanwhile, the participants had the opportunity to test their assumptions, which might change once they were situated within a more realistic learning scenario.

There were three features of the interactive PowerPoint, which was purposely designed to enable interactivity and enhance self-guided learning. First, the tabbed design of the PowerPoint made it possible for the learners to choose their own pace. They could freely jump from one slide to another and return to the slide of their choice at any point. Second, the PowerPoint embedded two videos and five live webpages as well as one free response

questionnaire, which aimed at providing opportunities for self-guided exploration and communication. Third, the PowerPoint included the section of 'Customised Advice', where learners were shown examples of targeted advice and were encouraged to come up with their questions and comments.

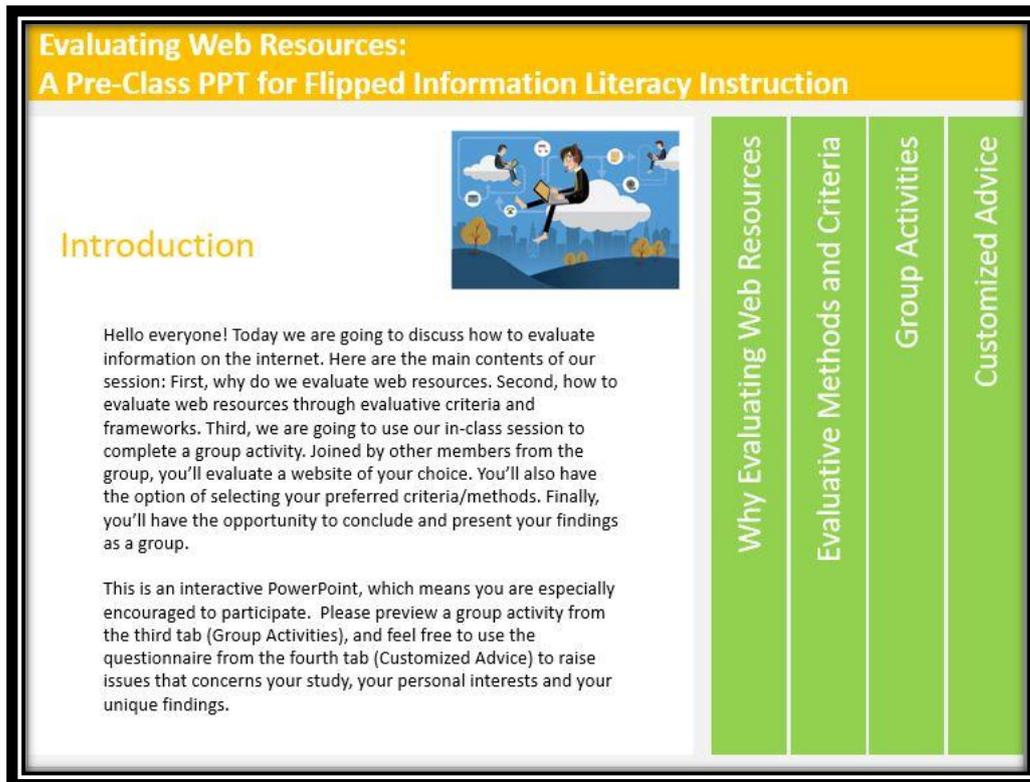


Figure 1: The home page of the pre-class interactive PowerPoint intended for a flipped IL instruction

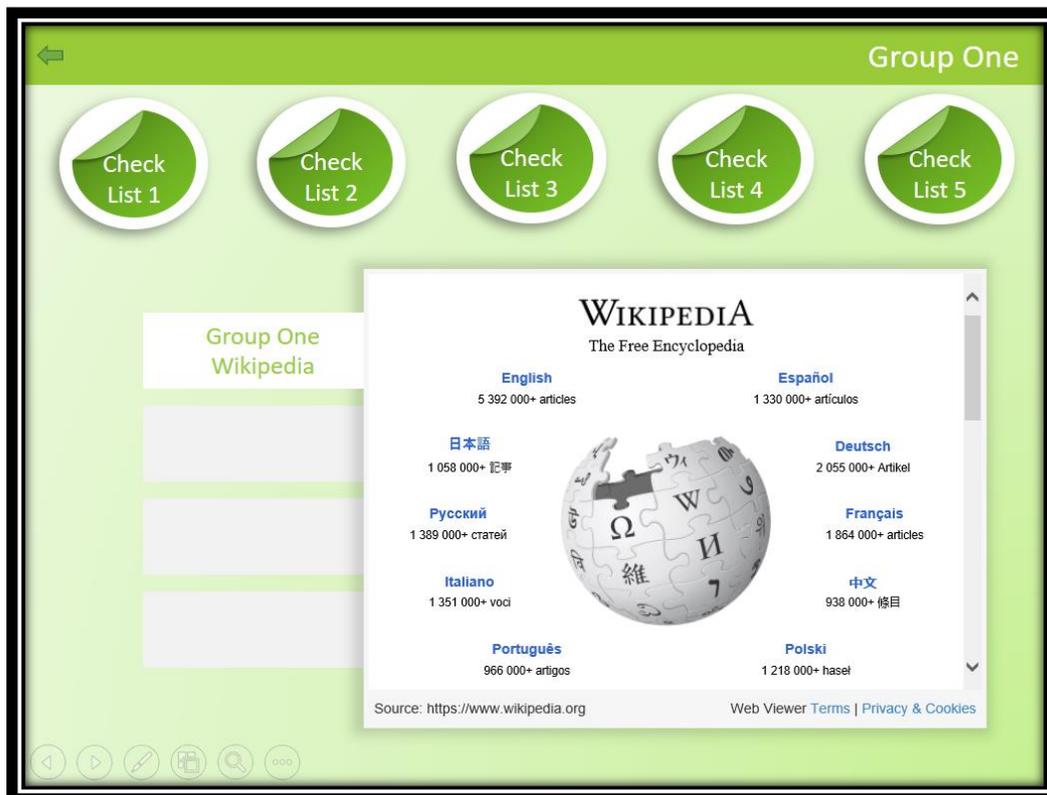


Figure 2: The slide where the learners can preview a group activity of their choice

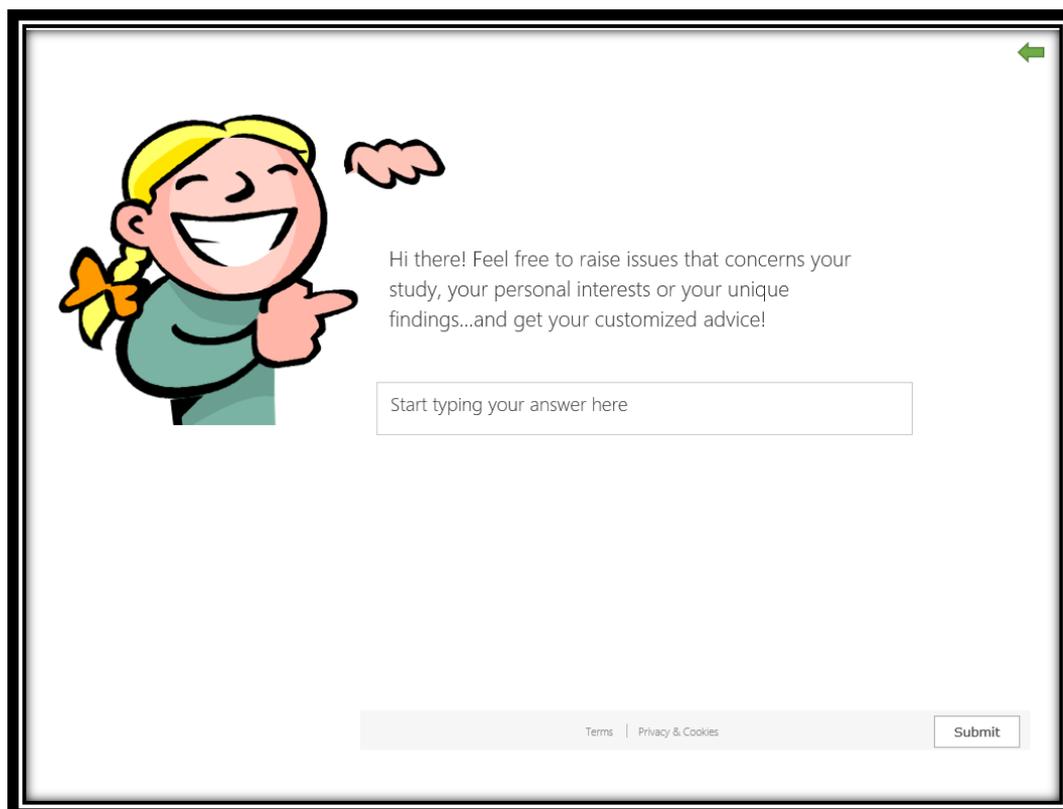


Figure 3: The slide where the learners can request personalised advice

The three participants who responded with feedback all liked the content of the PowerPoint. The typical runtime of the PowerPoint is around 15 minutes, which received no complaints from the participants. One positive factor pointed out was the interactivity of the PowerPoint, especially the two embedded videos. The negative aspect most commented upon was the complexity of the PowerPoint and the difficulty in navigation, especially when the embedded link did not work and when there were multiple choices presented at the same time. In the latter case, one participant was confused about what to do: *'I didn't know if I should click the next page button at the bottom of the screen, or one of the tabs, or wait for the bold text to scroll to the end and it would move on automatically [...]'*. One participant became frustrated when there were five different types of checklists to choose from, and when he had to choose one of the five websites to evaluate. As to the section containing customised advice, there was no mention of its benefits. The core messages from this feedback were as follows: more instructions on how to use this PowerPoint would have been nice; the information being presented could have been structured more clearly; there were too many options.

7. Discussion

Some of the results from the first stage of the interviews were as expected and are consistent with findings from previous research stating that a flipped teaching model facilitates better engagement, deeper learning, and more targeted guidance from teachers. Seen from the perspective of phenomenological 'essence', these elements are pertinent to the typical structure of a successful flipped classroom. New findings emerged in the first-stage interviews, which reveal learners' high expectations of the integration of technology in the flipped classroom, their willingness to see more personalised course content and new methods in assessment, and the fact that they enjoyed control over the course of learning. These new findings point to the possibility that more elements could be included as part of the essence of a successful flipped classroom; however, they would need to be adequately tested in terms of feasibility and effectiveness.

The second-stage interviews were not based on real classroom experiences; instead, they sought responses regarding a new design of pre-class materials with considerations of personalisation and collaborative learning. The limitation of this approach was that many of the essential elements for a typical flipped learning environment were missing: there was no real guidance from the teacher, no class-time practical activities where instant feedback and help could be facilitated, and no group discussions or peer support. This design, however, offered an opportunity to examine Giorgi's notion of risk taking in learning, as has been previously mentioned; thus, learners could 'come up with their own intuitions and insights' through their own exploration, which meant that the facilitator could 'try to create space for the learner to gain or develop his or her own intuitions' (Giorgi, 1999, p.85). Meanwhile, this design could be used to highlight the gaps that need to be urgently addressed in the follow-up session or, in other words, 'in-class time'.

Results from the second stage indeed exposed a huge gap between the desire for a more self-guided, personalised flipped class model and the difficulties occurring in the course of self-guided learning: overall, the negative responses from the participants were *'feeling confused'* and *'not sure what to do next'*. The participants failed to recognise the controls that had been handed over to them (the design enabling participants to view the content in a preferred order; the power of choosing their preferred website to evaluate; the options of asking for more resources that best suited their learning needs); instead, they kept looking for instructions that told them exactly what to do. These results are contradictory to the results from the first-stage interview: one of the participants clearly stated that he wanted to have options to choose from so that he could pursue desired capabilities through a more targeted learning path; another participant wanted materials that reflected her interests, and yet a third participant expressed positivity toward student-led learning.

The reasons for the gaps revealed above are threefold: first, the interactive PowerPoint has some inherent flaws. The third and fourth tabs have multiple layers in themselves that need to be viewed through certain access points. This may have caused unnecessary complexity for learners. Another reason is that there was no communication regarding how to use the PowerPoint beforehand, resulting in confusion about navigation. The most important reason, however, is that the mind sets of the participants hadn't changed fundamentally compared with those of learners in a traditional classroom. All participants were still expecting clear instructions and worried about missing signals from the invisible instructor. They were not properly informed that they could decide how to learn and what to explore. This probably explains why the participants did not appreciate the choices offered to them. Also, the participants did not really understand the concept of customised advice and decided to ignore it.

In light of Giorgi's opinion on a kind of 'mediation' that needs to take place in learning, which should lead to behavioural change and competence (Giorgi, 1999, p.81), the flipped classroom model itself needs to be learned and tested before its implementation. Learners' mind sets need to be 'mediated', so that they can fully embrace the benefits of their own exploration. Another lesson from this experiment is, perhaps, that learners may still expect relatively authoritative information in the early stages of their learning. This message was made clear by the repeated requests for clarity and '*clear structure*' throughout the two-stage interviews. Pre-class materials that are carefully selected and assessed by academics and professionals are expected to build a solid foundation for more targeted and personalised learning further down the road.

Finally, as Giorgi indicates, a key ingredient in facilitating learning is not to provide answers to every question that the learner asks; instead, it is to recognise the 'existential place' that the learner is at and to lead the learner to go forward from there (Giorgi, 1999, p.85). In the case of the flipped learning model – with its theoretical foundation still forming and full pedagogical implications being investigated, as mentioned earlier – it is crucial that learners' learning habits and mind sets be assessed in order for them to get involved in the flipped model.

8. Limitations and future research

The obvious limitation of this study is that only five subjects participated in the interviews, which might have rendered the findings less convincing. This situation can be remedied as studies with similar interests emerge in the future. The second limitation is that, due to restricted resources in providing a fully-fledged flipped learning scenario – in particular, the lack of software to develop a truly interactive PowerPoint – the results from this study might have been overshadowed by technology-related frustrations.

Due to the limited scale of this study, perspectives from teachers and instructors who have previously been involved in the flipped teaching model were not included. Research, especially that targeting instructors' experiences and perceptions regarding the same topic, will greatly complement this study. Also, this study discovered a gap between learners' expectations of flipped learning on a more advanced level (personalised and more collaborative) and the fact that learners are still accustomed to a traditional learning path (seeking instructions wherever possible), which fundamentally hinders the implementation of a flipped teaching model. More research is needed to explore ways of altering learners' mind sets to enable learners to embrace the full potential of flipped learning.

9. Conclusion

This study is an attempt to address the overall lack of research regarding perceptions of a flipped classroom model among learners, despite this teaching model having been reported to yield good outcomes in most IL instruction cases. Two-stage interviews have been completed to gauge responses from learners who were previously exposed to the flipped teaching model. The results from the first-stage interviews showed that general perceptions among the participants were positive regarding flipped classrooms. In addition, strong potential was indicated in applying key notions from personalised learning theory and OCL theory in the flipped teaching model.

The results from the second-stage interviews indicated interest in interactive features of a purposely designed PowerPoint with personalised and active elements. But the participants had difficulty in navigating the PowerPoint, and there was no appreciation for customised content and the choices offered.

Amedeo Giorgi's phenomenological perspective regarding learning provides a framework for the interpretations of the data collected. First, among study participants who had previously experienced flipped learning, there was a gap between the desire to embrace the flipped learning model and insufficient comprehension about the model and its full implications. This highlights the importance of recognising the 'existential place' (Giorgi, 1999, p.85) of the learner and providing targeted guidance regarding the flipped learning model itself, preferably during in-class time. Second, despite many merits of flipped learning, such as learner engagement and deep learning, there are many hurdles to overcome for the flipped model to deliver optimal results. Aside from technological deficits that might cause problems – which may always be an issue in online education – learners' mind sets about flipped learning need to be assessed and 'meditated' so as to achieve behavioural change and competence (Giorgi, 1999). Finally, elements of personalisation and collaborative learning have been proven to be pertinent to the flipped learning model, but they can only be effective when learners gain or develop their own intuitions (Giorgi, 1999, p.85) so as to take control of the learning process and fully embrace the flipped learning model.

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