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Key Elements Necessary for Building Lifelong Skills in a Flipped Learning Environment

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Purpose:

To address the gaps in the literature, the aim of this multidisciplinary research project was to uncover undergraduate student perceptions of the key elements necessary for enhancing the student learning experience through increased social interactivity, critical thinking, and self-regulated activities in a flipped learning environment. The research question was 'what do students' identify as key elements in a flipped learning design'?

The modern iteration of the 'flipped learning environment' is grounded in egalitarian philosophy and underpinned by inquiry-based pedagogy (Dewey, 1916). Lipman (2003) combined the concept of learning communities with that of social activities to create a constructivist-collaborative theory of learning. These philosophical and theoretical foundations reflect the use of Community of Inquiry (CoI) frameworks in the design of contemporary flipped learning approaches to enhance self-paced and self-regulated learning (Gutierrez-Santiuste et al., 2015; Kim, Kim, Khera, & Getman, 2014).

Emerging evidence links flipped learning to: high-level pedagogy using inquiry-based models of learning (Lipman 2003; Goodyear 2005); improved academic outcomes and performance and, increased student and staff satisfaction. However, there is much less conclusive evidence on the capacity for flipped approaches to build lifelong learners (O'Flaherty and Phillips, 2015). According to O'Flaherty and Phillips (2015), there are several reasons for the shortfall and include issues such as the absence of a single model for flipped learning, or, that educators involved in curriculum renewal may not fully understand the pedagogy of how to effectively translate the flipped class into practice and, that the key elements necessary for successful flipping and the link between pre- and face-to-face sessions are not well understood.

Additionally, O'Flaherty and Phillips (2015) identified gaps in the literature that need to be addressed for effective implementation of flipped learning. These gaps include (i) an under-utilisation of conceptual frameworks that enable a united approach to pre-, face-to-face and post learning activities, (ii) an underdeveloped capacity to blue print conceptual frameworks into context-specific plans and, (iii) poor understanding of how to design and support inquiry-based learning and metacognition in flipped learning curriculum (O'Flaherty and Phillips, 2015).

Methods:

In 2016, undergraduate students enrolled in 8 courses across 7 disciplines were invited to participate in a qualitative survey at 2 time points over 2 semesters. The disciplines included: science, education, nursing, public health, occupational therapy and business. Four data sets were generated: Informal in-class feedback was collected in semester 1 and semester 2 in week 4 and week 12 using a web-based student response system. A 'Start', 'Stop', 'Continue' questioning technique was used. Students in each course were asked to comment on what they would like the course coordinator to start, stop and continue in relation to the flipped classroom design. The university human research ethics committee approved the research study

Results:

A total of 947 responses were generated. Data for semester 1 & 2 were collapsed into one file for week 4 and one file for week 12 respectively. n=731 from semester 1 & 2 in week 4 and n=216 in semester 1 & 2 in week 12.

Data were analysed using an adaptation of Ritchie and Spencer's (2007) five-stage qualitative data analysis process:

Stage 1 – Familiarisation (with data)

Stage 2 – Identification of thematic framework (key themes emerging from the data)

Stage 3 – Indexing (creating relevant, meaningful and concise word labels to explain each identified theme)

Stage 4 – Charting (re-arranging data from original context to the appropriate thematic reference)

Stage 5 – Mapping and interpretation (reviewing themes for connections and patterns and seeking explanations for these).

Thematic analysis was used to sort and code the data into general themes and then, further distilled down into meta themes. Meta themes describe the broad areas that students provided feedback about in relation to the flipped approach. Six meta themes emerged from week 4 and 12 data revealing 6 key elements necessary for effective flipped design and included (i) Pre-, in-class and post- class activities, (ii) Information sources and materials, (iii) Format (workshops, tutorials, 'supertutes', lectures), (iv) Teaching approach, (v) Learning environment and, (vi) Assessments and feedback.

Wood and Levy (2015) identify 8 factors to consider when designing an inquiry-based learning (IBL) course. These are activities, assessment, Information, spaces, technologies, tutoring, collaboration and, dissemination. The meta themes derived from the research presented here, reveal that students share similar views about the key elements necessary for their learning. The findings support the use of IBL as a conceptual framework in the design of a flipped class and substantiate the application of key elements in designing effective flipped learning activities.

Conclusion:

Inquiry-based learning (IBL) is recognised as a pedagogical foundation of flipped approaches. The inquiry-based learning framework (Levy, 2009; Wood & Levy, 2015) is a useful conceptual model in pedagogical design because it describes the processes involved in promoting an open, collaborative, knowledge-building orientation in learning activities (Levy & Petrulis, 2012). It could be argued that flipped environments have the capacity for building lifelong skills in 21st Century learners because the positive impact of communities of learners in the development of socially interactive, critical thinking, independent learners who demonstrate advanced information literacy (Wood & Levy, 2015).

Title:

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Keywords:

Flipped Learning, Inquiry-based Learning and Life-long Learning skills

References:

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Abstract Summary:

The presentation reports on a multidisciplinary research project about student perceptions of the key elements necessary for building a community of learners and enhancing faculty-student interactivity in flipped learning environments. Participants can expect to examine the conceptual framework, Inquiry based learning (IBL) as a tool to guide flipped learning design.

Content Outline:*Introduction*

The content of the presentation will give participants the opportunity to: (a) examine the use of the conceptual framework, Inquiry-based learning (IBL), as a pedagogical foundation of flipped classroom

approaches and, (b) identify key elements in flipped learning designs necessary for enhancing life-long learning skills.

Background: Flipped learning is not new. For decades, educators have provided learning materials for students to engage with prior to face-to-face sessions. However, the modern iteration of flipped learning often utilises technology to enhance the delivery of materials. Digitally enhanced approaches reflect the accessibility and associated expectations for how technology can be integrated into the learning process to provide a more student-centred orientation, such as self-paced access to information, instant feedback, or to create opportunities for faculty-student interactions. Hence, this presentation will showcase flipped learning as not merely an inversion of the teaching and learning process but rather a teaching philosophy, and a pedagogical strategy that enhances the student learning experience through increased interactivity.

The problem: Flipped learning has no definitive definition, nor does the literature provide a blueprint that translates conceptual frameworks into context-specific plans for curriculum design. This presentation will reveal results of a recent scoping review that suggests that educators involved in curriculum renewal may not fully understand how this pedagogy translates into 'flipped' practice. The lack of consistent definitions, conceptual frameworks and models means that flipped learning means different things to different people and is implemented in a variety of different ways. The reasons for flipping may not always be scholarly and so the presentation will also highlight the learning and teaching imperatives that drive flipped approaches in the 21st Century, such as the capacity to build lifelong learning skills. Life-long learning skills provide students with the foundation for continued educational development and work readiness. These skills support student thinking, self-regulation, and social interaction in the present and, in the future. Ultimately, these skills enhance student achievement of educational goals and career goals.

Situating flipped learning as higher-level pedagogy: Flipped learning approaches may require a philosophical and pedagogical shift in mind-set. In this presentation, educational design principles for networked learning will be discussed in order to situate flipped learning as a strongly student-centred pedagogy that delivers inquiry-based, egalitarian education. It will be argued that flipping requires a change of focus from content delivery to higher-level pedagogy that focuses on building communities of inquiry, developing learning skills and, self-regulated learning. 'Inquiry-based learning: a framework' (Wood and Levy, 2015), will be presented so that participants can examine its utility as a tool that encourages educators to critically reflect on course and/or program design in order to implement flipped philosophy and pedagogic strategies that transform learning from staff-led to student-led activities and, from content to process orientation. Rather than offering a prescriptive template for design and suggesting that there is only one approach to flipped learning, the presenter hopes to encourage a more holistic view of flipping that is suitable to different contexts. This perspective requires that educators firmly embrace foundational democratic philosophy and use diverse pedagogic tactics that promote a community of learners that can support each other.

Situating flipped learning as pedagogic strategy: Flipped learning is underpinned by inquiry-based concepts. Wood and Levy (2015) identified eight key elements necessary for effective flipped learning design that can offer operational guidance on how flipped learning approaches work in practice.

Research study presentation:

- (i) Background/motivation for the study – Identified gaps in the literature that included an under-utilisation of conceptual frameworks that enable a united approach to pre-, face-to-face and post learning activities,
- (ii) an underdeveloped capacity to blue print conceptual frameworks into context-specific plans and, (iii)

poor understanding of how to design and support inquiry-based learning and metacognition in flipped learning curriculum.

(ii) Method – Multi-disciplinary, qualitative survey data collected from undergraduate students to identify perceptions of the key elements of effective flipping. Data were analysed using thematic analysis. n=947 responses from students in 8 courses across 7 disciplines.

(iii) Findings – six meta themes emerged.

Summary - 8 key elements identified by Wood and Levy (2015) will be compared with 6 elements of a flipped classroom (derived from the research meta themes) that were perceived to enhance learning in a flipped environment by undergraduate students in 8 courses across 7 disciplines from one university in South-East Queensland, Australia.

Conclusion

Inquiry-based models of learning provide a valid blueprint to translate concepts necessary in flipped learning approaches into context-specific plans for curriculum design.

A conceptual approach rather than prescriptive approach means that flipped design can be context-specific and 'fit for purpose'.

Several key elements have been identified as important in effective flipped learning approaches.

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Professional Experience: Julie qualified as a registered nurse in 1986. She has 28 years international experience in clinical practice within intensive care, coronary care, cardiothoracic surgery, spinal injuries, oncology and vascular, stroke and oncology clinical trials. Julie moved into the university sector in 2009 and completed her PhD in July 2015 and was the recipient of Central Queensland University (CQU) 'Thesis Academic Excellence Award'. Julie is currently involved in teaching and research activities involving medication safety. In 2016, Julie partnered with local doctors and pharmacists to undertake translational research in medication error in the elderly. As the course coordinator for the Bachelor of Nursing Science degree, second year undergraduate pharmacology course, Julie's interest in flipped learning stems from her desire to find new and innovative ways to help undergraduate nurses grasp scientific concepts in pharmacology and apply this knowledge to clinical practice settings. Julie is the author and co-author of 8 publications.

Author Summary: Registering as a nurse in 1986, Julie has 28 years clinical experience. She moved into the university sector in 2009 and completed her PhD in July 2015. Julie is currently involved in teaching and research activities involving medication safety. Her interest in flipped learning stems from her desire to find innovative ways to help undergraduate nurses grasp scientific concepts in pharmacology, and anatomy & Physiology, and apply this knowledge to clinical practice settings.

