

Applying inquiry-based learning to students in integrated programming



Applying inquiry-based learning to students with context of integrated programming is critical when catering to the needs of students today. This approach is about giving students the dispositions, skills and opportunities, to investigate by finding out information, making meaning and taking independent action from their findings (Murdoch, 2015). Key components for students to thrive include; taking ownership of their learning, work through real life tasks that are of interest to them, develop problem solving techniques, take risks, become capable researchers, and be motivated to explore and discover new knowledge (Walker, 2011). This stresses the importance to gain skills rather than understanding of content. Inquiry-based learning challenges and extends students thinking as new knowledge is constructed in collaborative engagement within the learning environment.

An explanation on how children learn when implementing inquiry skills and applying integrated programming to develop students today, with links to the personal philosophy of teaching from the author will be discussed. The 5E's, Murdoch, and the Research Cycle models of inquiry will be compared and critiqued with links made to curriculum documents and frameworks to cater for competent and contemporary learners.

Students acquire knowledge when they are supported and have control over their own learning within a safe child-centred prepared environment.

Theorists such as Dewey and Piaget emphasise that educators must provide opportunities for students to build their own curiosities that is age appropriate and can engage in conceptions that add to their appreciation of their world (Pound, 2005). This is seen within the Melbourne Declaration Goal

2: which “ states that successful learners develop their capacity to learn and

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have an active role in their own learning” (Barr et al., 2008). Undoubtedly, when students have an active role in building understanding and making sense of information, they construct their own meaning and are motivated to work hard and master the skills necessary to reach their goals (Marsh, 2004).

Montessori’s theory highlights how education initiates at birth, how students encounter ‘sensitive periods’ a captured point of time when they are motivated to learn, and how important the prepared environment is to cater to their interests (Pound, 2005). The author believes that human development and learning plays an important role within a prepared learning environment (O’Hearn, 2014). Students collaborate within focused learning environments as they engage in using critical and creative thinking, to solve complex problems and become mindful global citizens (NSW Department of Education, 2018). Learning environments that are designed to facilitate independent learning through hands-on purposeful tasks that interest students, will provoke motivation to learn.

Vygotsky adds the social component theory as he underlined the contribution to learning made by others, where the learner learns from someone (peer or adult) more competent (Pound, 2005). “When educators implement learning strategies within social contexts, students gain the ability to connect, collaborate, and problem solve by looking at multiple perspectives and incorporating information from different fields” (Department of Education, Employment and Workplace Relations [DEEWR], 2009). The author highlights the significance of scaffolding students to support them to gain knowledge and understanding (O’Hearn, 2014).

Integrated teaching and learning also support this when together, teachers and students collaborate ideas across numerous subjects connected to certain characteristics or context. An integrated teaching approach focuses on the interconnectedness of child-directed learning, supported learning, and adult-led learning, and allows students to engage in purposeful relevant learning (Lake, 2014). For example, the Australian curriculum general capabilities “ have an integrated and interconnected set of knowledge, skills, behaviours and dispositions that can be developed and applied across the curriculum to help students become successful, confident, creative, active, and informed citizens” (Australian Curriculum, Assessment and Reporting Authority [ACARA] n. d). As a result, students are more likely to achieve higher success if taught in this manner and achieve a clearer grasp of curriculum content. Alternatively, “ in relation to Gardner’s Multiple Intelligences, some students would require singularity of content knowledge while others would relish opportunities to interconnect their learning across subjects” (Hudson, 2012). Clearly, curricula integration would require informed educational approaches on when, why, and how to incorporate subjects to develop 21st Century learners.

One way to prepare students with learning abilities is to ensure the provision of a solid foundation for skill acquisitions to develop a selection of thinking and investigation capabilities on how to learn (Walker, 2011). This is achieved when inquiry-based teaching and learning is applied. When educators provide inquiry models, it offers students the inspiration to improve their skills, opportunities to investigate as well as sparking their internal curiosity. It gives students the skills to ask questions and find the

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answers to a problem, task or idea, whilst being physically active as they are directly engaging in hands-on experiences, allowing high-order thinking to transpire. These tasks prompt students to “question, predict, gather, analyse, synthesize and reflect” (Murdoch, 2015). Models such as the 5E’s progress through five phases that structure the learning journey of: Engagement, Exploration, Explanation, Elaboration and Evaluation, promoting collaborative learning opportunities, and recongising links within the curriculum, to drive true and focussed learning (Primary connections. 2019). Similar to the 5E’s model, the Murdoch inquiry model progresses through similar phases and processes and which design strategies “that support the brain’s inclination to wonder, notice patterns, seek new information, connect to prior learning, create, transfer and reflect” (Murdoch, 2015). The Research Cycle model differs as it is strongly focussed on essential questions. Students who are constantly modifying and reconsidering their research questions and plans throughout this process need to “cycle back repeatedly through the stages, making the process less linear with the more skill they develop” (McKenzie, 2000).

Questions give voice to desires, ideas, uncertainties and curiosity, they help students uncover and discover new meaning and is at the heart of inquiry (Murdoch, 2015). For example, educators could refer to Blank’s four levels of questions. These levels begin from a range of basic questions derived from simple concrete information to more complex abstract information (Therapy Focus, 2015). Blank’s levels of questions are an easy to follow guide along with developmental stages and ages of children.

In contrast, using inquiry-based models can become disadvantageous for some children who may have negative attitudes towards the inquiry activities and perform poorly, lacking in creative thinking. Likewise, some educators may place greater stress on achieving basic skills and knowledge, neglecting the creativity and deep thinking that comes from using these models of inquiry (Shao, 2018). Therefore, educators must have a clear understanding of how to implement models and inquiry and to moderate or adapt for learners who lack the ability to engage within the approach to inquiry-based learning. The challenge therefore, is for educators to cater for the needs of contemporary learners for example, diversity and gifted and talented students, ESL students, or students with disabilities

One way to cater for contemporary learners, is for educators be flexible and adapt to individual needs when providing learning strategies. Irrespective of need, strength, culture, ability, disability or experience, using models of inquiry along with scaffolding strategies will ensure that all students become successful, eliminating a sense of failure to their pedagogical achievements (Walker, 2011). For example, “ The Australian Curriculum recognises that all students are entitled to rigorous, relevant and engaging learning programs drawn from a challenging curriculum that addresses their individual learning needs” (ACARA, 2016). Promoting students as competent and capable learners will give educators the opportunity to empower them with genuine choices that supports them in the decision-making process of their learning, encouraging collaboration and communication of ideas and to persist with any challenges that arise (Australian Children’s Education and Care Quality Authority [ACECQA], n. d). Similarly, the author is inspired by Howard

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Gardener's Multiple Intelligence Theory, which "states that individuals have the potential to enhance the multiple intelligence areas based on their genetic structure and the limits of the environment in which they live in" (O'Hearn, 2014).

The Australian Professional Standards for teacher 1.3 portray educators to "demonstrate knowledge of teaching strategies that are responsive to the learning strengths and needs of students from diverse linguistic, cultural, religious and socioeconomic backgrounds" (Australian Institute for Teaching and School Leadership [aitsl], 2017). The author's belief is to progress an integrated curriculum fostering student's interests, promoting intrinsic motivation that inspires a passion to learn, and by using an inquiry approach to support and extend student's learning (O'Hearn, 2014).

In conclusion, the use of inquiry-based learning and incorporating integrated programming to develop skills in the 21st Century and cater for competent and contemporary learners has been justified. Most educators would build upon the philosophy and influences of theorists as students are likely to engage in meaningful learning, when given ownership of their education within a prepared environment. Three inquiry models have demonstrated the effectiveness of design strategies to support deep thinking to curiosity, identify patterns, seek new information, connect to prior learning, create, transfer, and reflect. Yet educators must have a clear understanding of how to implement these models and to moderate or adapt for learners who lack the ability to engage within inquiry models. Links have been made to curriculum documents and to the author's own philosophy of teaching, to demonstrate how education today requires recognition that <https://assignbuster.com/applying-inquiry-based-learning-to-students-in-integrated-programming/>

successful learning requires a set of essential foundational skills. These skills must be transferable and adaptable with the use of inquiry models to spark student's curiosity and opportunities to investigate. It also concludes how educators must establish awareness of teaching approaches that are receptive to the learning strengths and needs of students from diverse backgrounds.

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