

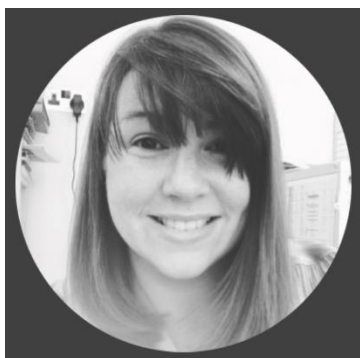
An Chomhairle
Mhúinteoireachta

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Title of Research Project: Discovery Learning: A Case Study on the Implementation and Impact on Students and Teachers

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Relevant key words: Discovery Learning; Inquiry-based Learning; Knowledge Retention; Student Engagement

Summary:

Discovery learning (DL) is an intrinsic part of the Irish education system as it builds on the natural inquisitiveness of children, encouraging them to build on their past experiences and knowledge, using their creativity, intuition, and imagination to discover new information, facts, associations, and new ideas. Data was collected from primary teachers (n=33) to assess the awareness of and use of DL in the classroom. It was found that they had a poor understanding of DL, its uses outside of STEM classes, and a reluctance to use it outside of mainstream.

To explore the usefulness and application of DL as a teaching methodology, a case study was designed to investigate the training, use and effect of DL during visits to Airfield Estate. Airfield Estate is an urban farm where students come to learn about food and its production in an Irish context. Education guides are used to work with small groups of students to explore and build on their knowledge for a deeper learning experience. Six education guides from teaching and non-teaching backgrounds were selected to undergo training in DL and deliver the educational visits utilising DL methodology. A handbook on DL was created and training consisted of four, 2-hour sessions. It included sessions on DL methodology, higher order questioning, appropriate activities and role playing. The guides then administered DL methodology in visits to the estate and were asked to record their experiences. The guides reported a positive effect of DL on both their experience and interaction with the classes (with some challenges around interaction and prior knowledge).

Data was collected from 293 primary students (1st to 6th class) from 10 schools randomly selected from those visiting the estate during a two-week period. To assess longevity of learning and establish prior knowledge, these groups were surveyed at the beginning of the visit and then again in their classrooms 2 weeks later (the same survey was used each time). It was found that students had both improved and retained knowledge from their visit 2 weeks prior. The visits were also monitored to assess levels of interaction between students and between students and guides/teachers. It was observed that levels of interaction were concomitant with the number of questions from students and spontaneous conversation around the topic. Teachers were also asked to rate the use of DL during their visit and give feedback. 76% were positive towards its use and effect on students during the visit. It was requested that pre- and post-visit activities be created to support the learning in the classroom. These were produced and are now available to all visitors here.

This case study highlighted a lack of understanding of DL and its use within the classroom. However, it demonstrated the effectiveness of DL outside of true STEM classes, its positive effect on knowledge retention and increased enjoyment of learning for guide, teacher, and child.

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