

MSc in Applied eLearning

Assignment Cover Sheet



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Learning Theories Paper on Information Technology

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Introduction:

There is no single agreed definition of what learning is, as it can be interpreted in many different aspects of teaching and learning depending on the subject matter. (Jordan, Carlile, & Stack, 2008)

Being a facilitator of Information Technology courses at an Irish third level institution, the theories that will be applied to practice as part of this paper are Behaviourism and Cognitivism, with specific discussion on the theorists Pavlov, Thorndike, Bloom and Gagne. The frameworks of both theories appealed for exploration of my facilitation role working with adult learners from a diverse range of cultural and socio-economic backgrounds. I have tutored and lectured in this role for nine years. Providing the learners with the necessary theoretical and practical skills, knowledge and competence, to gain a comprehensive introductory foundation and understanding from FETAC level 1-6 in computing. Under the umbrella of the guided disciplines of the CDVEC and FETAC. Teaching the homeless from The Foundation Programme on a weekly basis through the ICT centre delivering FETAC level 4 Computer Applications and Information Technology gave the students an insight of the importance and relevance of how education can change their life's. The attendance could be a bit hit and miss depending on the individual learners circumstances. Working with a cohort of students with intellectual and physical disabilities for seven years provided me with the opportunity to see firsthand the discrimination, prejudices and stigma that are associated to the learners not only from members of their own families, but also from society itself. Helping to develop a programme from level 1 onwards with the learners needs integrated allowed a hands on approach for the learners to interact with technology first hand. Developing skills using a microwave to heat food, how to turn on and use a remote for the television, how to make a landline call and mobile call, how to turn on and tune in a radio station. Guidelines on using a house/car alarm from the learners perspective. Delivering a varied approach in my style of teaching and learning to allow learner's not to feel excluded or invisible. The students were then given an in-house cert for their achievements.

“To be considered learning, a change in performance/performance potential must come about as a result of the learner's experience and interaction with the world”.

Applying Behaviourism in Information Technology

Jordan *et al.* (2008) argue that behaviourism can be applied to lower levels of learning and is not necessarily applied to university level. Teaching adults with intellectual and physical disabilities for seven years has shown how behaviourism and its key concepts have been part of my teaching, especially in how I need to consistently adapt to the students needs and requirements. Being aware of this allowed what Tennant, 1997 suggests is the balancing of their educational needs while delivering a certificate based framework. (Armitage, *et al.*, 1999) argue that as learners try and adapt to a new classroom and teaching environment, the awareness of the students' requirements and structure, become evident very quickly. (Armitage, *et al.*, 1999) Reinforcement of positive behaviour and forming an environment that is safe and conducive for learning is paramount in my classroom. Starting the students' with a very basic level of literacy and oral and written communication is imperative to establish a relaxed atmosphere. Interaction happens early in the class at a basic level with informal conversation, asking the students' to talk about themselves, and ensuring they feel comfortable enough to interact with each other for subsequent group tasks involving basic elements of computing. From a behaviourist perspective this is using reinforcement with positive feedback to encourage student engagement with questions and answers, class discussions or a quiz. This is followed by a provision of an introduction on the learning objectives of the module, and discussion of what students' need to do to reach them. Interactive technology is used in the class such as online typing to improve keyboard and numeric skills and games are introduced to advance mouse skills. From my experience, this scaffolded approach this enhances the students' learning abilities as the combination of strategies support different cognitive/ concentration levels and ensures learners are not bored.

The use of technology has been invaluable for providing evidence of the learner acquiring a new skill by taking a photograph or using a step-by-step approach focusing on how they turn on a central processing unit and monitor or launch a software application. An example of this is when students' are learning how to use Microsoft Word and are required to key in a specific task, save and print a document and place the evidence into a portfolio. They can also be asked to use a video or podcast to document the learning outcomes of their work presented in small manageable chunks as recommended by (Skills toolbox, 2010) so they can see progression in their learning. This positive approach can allow the students' progression to be monitored, and demonstrate to an external examiner that the learner has acquired a specific level of skill-based knowledge. The online resources can also be replayed to help the

students reinforce their learning. As a facilitator, however, it is imperative to be aware that not all students like to be photographed/ videoed; in my experience, this can lead to the demonstration of negative behaviour in some students', causing isolation and, shyness preventing class participation, and could be perceived as a punishment to the learner as they need to prove their ability in completing the task. This then in turn has to be produced as specific learner outcomes (SLO) for FETAC. (International, 1998)

Teaching in a group environment can be challenging (LondonDeanery, 2012) Having awareness of the principles of behaviourism has influenced how I ensure that individual student needs, requirements and objectives are met in a group learning context. By taking a way any assumptions and stigma or barriers about learning a particular software package can as Armitage, *et al.*,(1999) suggest allow, the student and facilitator to access and evaluate the students needs and relate them back to the appropriate software for example if a student has literacy difficulties the interactive software (TTRS) Touch Type Read Spell is an excellent resource for the student. This helps to reassure the student and build on their confidence.

Evaluating each student and their progress at the end of class, provides the facilitator with an opportunity to see how best to plan the next lesson. Often this involves using different teaching methods to allow for the repetition of the previous lesson and enhance sequencing of the learning events. I use a student assessment review form at the end of each lesson. This allows the student to write in the work and tasks that they have completed in class each week. The student also writes in their name and date and gives a brief description on if they need further revision for the following week's lesson. I sign and date the assessment form and also review the students' performance and make notes for referral the next lesson.

Computer-based training can be reliant on chunking the material into sections of 20 minutes duration and by varying the instructional design approach used. This can hold the apostrophe of positive behaviour, attention and by providing tea breaks where necessary the learner can retain more of the lesson and this in turn can lead to the appropriate required behaviour. By using a 'lollypop' as a reward stimulus, the student learns that positive feedback, engagement and class participation results in a positive response from the facilitator, however, In my experience using intermittent reinforcement can also have the same effect it's not always necessary to give a sweet treat. If the student does not acquire the relevant skills and have their learning reinforced from class to class, their skills can diminish over time. The

principles of behaviourism do not always follow mirror patterns of positive behaviour in adult education. It is my belief that the personality of each individual learner and their personal circumstances on any given day contributes to how they behave. While facilitating a class of male ex-prisoners on probation, on the first day of class, a student threatened to cut off my finger to get my jewellery and also implied that I would be followed home and 'something put into my letterbox'. The rationale behind this action was fear. Through further exploration of his personal circumstances, it emerged that the student was in fear of the other students and did not want them to find out that he had no prior knowledge of computers. In relation to my own prior learning and training nothing in theory had prepared me for this real-life situation. Drawing on my own inner strengths and resolve to not give up on these learners enabled me to redeliver the course content, re-evaluate my teaching practice and to be firm but fair in my approach to all students. It is my belief that if I had read more extensively on how to deal with complex and potentially threatening situations in class as part of my Joint Education Board (JEB) Diploma, I would have been better equipped to deal with this situation.

On a Friday morning I had arrived five minutes late for a lecture and a particular student used this opportunity to cause a scene in front of the entire class and manipulated the situation to undermine my authority. His behaviour although unacceptable, provided the opportunity to reflect on my own principles of practice and assess where my strengths and weakness lay and what needed to be improved, so that situation could be managed with less disruption to the other students and allow the class to continue. Always arrive to class early, and be prepared for disruptions, asks the student to leave the room and discuss the matters that had arisen after the lesson.

Classical conditioning is evident in some of my classes in how some students learn a variety of involuntary responses; for example, there have been instances where a student turns on a PC and it shows a warning instruction that their PC might be at risk;, the response was to turn it off again and the student develops a fear of using computers into the future. A further example is when a student learns how to navigate the Internet through trial and error. Entering a site that has unsuitable content has had a negative response and is breaking a set of classroom rules un-intentionally; from this experience the student needs to learn to use appropriate research facilities and best practice guidelines to avoid this occurring in the future.

How Cognitivism informs the practice of teaching Information Technology

“Computer Programming can be cognitively demanding” (Specht, 2008, p)

Working in both community education and third level education, I have found that the implantation of cognitive principles in relation to what Gage *et al.* (1998) describes as the input and output for processing information (hearing, sight, attention and control) is vital for success. Gagne’s nine steps of gaining attention, informing learners of objectives, stimulating recall of prior learning, presenting the stimulus, providing learning guidance, eliciting performance, providing feedback, and assessing performance and enhancing retention and transfer all feature strongly in my delivery of Information Technology Classes. Through the weekly assessment of the learner’s active participation and folder work it allows me to monitor the learner’s progression. Examinations are out of a percentage and formative feedback sheets are attached when returning the corrections to the learner.

I now have a better understanding of the domains of learning and this has helped me to consider how different conditions for learning in relation to verbal, intellectual, motor skills, cognitive strategies and attitudes can be included in my delivery of material. Using resources such as virtual learning environments (VLEs) such as Webcourses or Moodle, Email and ePortfolios can relate to cognitive principles such as Blooms Taxonomy. I use YouTube as a visual and auditory demonstration of topics and I find it helps guide the learner through a step by step approach to the task in hand. I use class discussion and questions and answer sessions to gain students’ attention and explore certain topics such as Information Technology Theory and also incorporate on line technology using Mind Flash software to collect data to monitor the students progression. Setting group tasks using online resources such as e.g. Prezi.com encourages the students to participate and engage in activities outside of the classroom environment, and furthermore allows them to evaluate their own learning on the package. Group tasks allow the learners to collaborate and share resources to produce an online learning journal of reflection. Students have to submit their assignments through Safe Assign and are graded and provided with feedback to verify that they have acquired the requisite skills or competencies in that subject.

Conclusion

The facilitation of information technology is informed by behaviouristic principles, primarily knowing when student’s interactions can characterise them making sense of and dealing with

the environment in which they are learning and having consideration of how the student makes relevant use of their educational experience and applies it to the workplace. There are many different ways in which computers can change the outcome of a student's learning journey in both community-based and third level education; for instance using a smart phone for translation, searching Google Scholars for e-journal articles, using the online database systems in the library, developing blogs or multimedia, using VLEs for instructional learning, posting to discussion boards and employing Microsoft Office suite to complete assignments, projects or presentations. However in my experience, a balance is needed as over-use of technology can make students lazy, not think independently for themselves and be reliant on 'copying and pasting' from the Internet instead of creating their own thoughts and opinions on what they have read and learned; It is also important to consider the cost of technology and how up-to-date and robust the equipment and facilities are, factor in costs for maintenance and repairs. In a rapidly changing third level educational environment, where technology is now more widely available to all ages, it is my hope that it can be positively embraced by all my students. While teaching Information technology in the community and third level education it has brought to my attention the huge gaps in education and the relevance of community education providing a foundation process ranging from level one to six to assist the students progression into third level education. At present I am teaching seventeen year old young adults in which they have dropped out of school or didn't get enough points to go directly into college and haven't enough skills to require a job. The stop gap in education is now finally being recognised and the relevant courses are now being readily available through Fás working in conjunction with the CDVEC. This process is allowing the students to gain direct access to further education whether it be to a level five, six or level seven programme.

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