

The Teaching Portfolio - A Vehicle for Successful Teaching at Third Level

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Abstract. The National College of Ireland (NCI) has placed to the fore student-centred learning, which has arisen from recent changes in Irish third-level education. More specifically the Informatics Department at NCI has successfully developed an innovative strategy for its provision of IT education. This has come about as a result of both a decrease in the uptake of IT courses nationally and a noticeable trend of low retention rates in IT courses. A core feature of this multi-faceted strategy has been the development and implementation of individual faculty Teaching Portfolios (TP), which is pioneering at third-level. A TP is a collection of information about a faculty member's teaching, compiled by that faculty member. The TP exhibits selected samples that illustrate how that individual's teaching is carried out. It is not, in itself, an instrument for teaching evaluation, but a vehicle for presenting information, which may include results of evaluations and new techniques tested. It can be selective, emphasising the positive—to serve as a showcase for the faculty member's achievements in teaching. Additionally, it is important that negative teaching experiments are highlighted. On a weekly basis at the Department level meeting a faculty member is selected to showcase their TP. This teaching vignette allows all faculty present to share ideas and find out what works and what is an ineffective teaching approach to try. The purpose of the TP is also to increase student motivation and collaborative participation within the given learning space. A challenge, which frequently occurs in first year classes, is the social integration of students and this obstacle has been overcome through the adoption of a number of TP techniques. A typical example includes the Magic Wand. The Magic Wand technique works by passing the wand to one student and asking them a simple question. That student on answering then passes the wand to another student in a different row and either they can pose a follow-on question or the lecturer will use a dialectic approach to draw out the required information. Student reaction to date has been very positive and feedback given has been that students enjoy coming to lectures where they feel important due to their required active participation. We believe that our students, as a result of our use of TPs are now becoming responsible for their own learning.

The development, implementation and evaluation strategies of the TP as well as applicable TP techniques will be discussed in this paper.

1 Introduction

“Learning to teach - like teaching itself - is always the process of becoming; a time of formation and transformation, of scrutiny into what one is doing, and who one can become” [1]

In the current Irish third-level education climate there has been a noticeable reduction in the uptake of IT related courses as well as a decrease in overall retention rates for courses falling within this category. Additionally, the continuous challenge of creating and delivering high-quality education has created a necessity for academic faculty to customise their education delivery in ways in which this said delivery is innovative and attractive to the student cohort in terms of their ability to learn.

TP implementation has been employed in Canada for approximately twenty years. Currently it is being adopted by many higher level educational institutions in America. There to date has been a noticeable lack of documentation in Ireland in relation to the adoption of the TP at third-level and at the moment reliable numbers of third-level education institutions using this as an approach to teaching and learning are hard to come by. The Informatics Department at NCI, however, has effectively been using the TP as a tool for faculty self-monitoring and advancement in terms of teaching and student learning for the past academic year. Shulman reminds us that the use of the TP, as a vehicle for successful education provision, can prove invaluable for a faculty member when revising the teaching and learning that took place. [9]

As such the TP can act as a catalyst

for desired change.

2 The Teaching Portfolio Defined

In its simplest form a TP is a collection of information about an individual faculty member’s teaching, compiled by that faculty member. It includes “documents and materials, which collectively suggest the scope and quality of a professor’s teaching performance. It presents selected information on teaching activities and solid evidence of their effectiveness”. [8]

In order to advance scholarship in teaching, the TP should allow the faculty members the flexibility to exhibit selected samples, which can illustrate to colleagues how each individual in the Department carries out their teaching. It is universally accepted that there is no one definitive model for the TP and it is suggested here that while being utilised to capture the complexities of teaching, faculty should use this invaluable tool to showcase their individual achievements within the teaching domain.

Conversely, we acknowledge that it is important to highlight any negative implementations that have occurred as part of the overall TP development in order to communicate the possible pitfalls linked to a particular TP technique to colleagues. Johnson et al. acknowledge that “the process requires risk-taking on the part of both students and faculty because both teaching and learning are laid open for review. Even well-planned innovations represent uncertainty because the problems and solutions are

unpredictable”. [4]

Kaplan suggests that it is good practice to umbrella within the TP a reflective/evaluative summary for each of the individual elements within the TP and on the faculty member’s particular approach to teaching and student learning to help set the context for the reader. [5] He advocates that the TP has become an effective means for faculty members to broaden each other’s views of the teaching and learning process. Furthermore, used effectively, the TP can function in enhancing the collaborative nature of the academic work environment. According to Froh et al. “the process of portfolio development is as important as, if not more important than, the final product”. [3]

3 What should be included in a TP?

There are many types of material that can be referenced or included within a TP. The usual practice is to update the TP on an ongoing basis. Typically, however, the toolkit should include materials prepared by the lecturer, assessment information, quizzes, handouts as well as individual module descriptors. [6]

Based on the luxury of experience it is recommended that the TP author should specify for each teaching technique (tried and tested or novel) employed its objective in terms of the desired learning to occur, its perceived value as well as the fore-mentioned reflective evaluation. In terms of TP usage the process of reflection is paramount.

Holistically, Seldin portrays the following as a useful blueprint or roadmap as to what should be contained within the TP toolbox [7]:

Faculty Member's Name
Department
Institution
Date
1. Teaching Responsibilities
2. Statement of Teaching Philosophy
3. Teaching Methodology, Strategies, Objectives
4. Description of Course Materials (Syllabi, Handouts, Assignments)
5. Efforts to Improve Teaching
◆ Conferences/Workshops attended
◆ Curricular Revisions
◆ Innovations in Teaching
6. Student Ratings on Diagnostic Questions
7. Products of Teaching (Evidence of Student Learning)
8. Teaching Goals: Short and Long Term
9. Appendices

Seldin concurs with our opinion that no two TPs are or should be exactly the same and the fact that the creation of a TP is a highly personalised process should allow for a high level of flexibility in its development. It should also be borne in mind that different course modules certainly lean themselves towards different types of formats and documentation.

4 Teaching Portfolio Benefits

Why should very busy faculty take the time out to develop and implement a TP? They might do so, as Cetal and Seldin suggest to [2] [7]:

1. Provide an occasion for self-reflection:
 - On teaching goals
 - On teacher-student relationships
 - On effectiveness of teaching strategies
 - On alternative methods for teaching and assessing teaching
2. Enhance awareness of teaching methods

3. Showcase a teacher's skills, growth and range
4. Document teaching and its effectiveness over time
5. Promote professional dialogue about teaching and growth towards an active teaching environment
6. Provide teaching tips about a specific course for new or part-time faculty
7. Leave a written legacy within the department so that future teachers who will be taking over the courses will have the benefit of their thinking and experience.

The list of benefits seems endless and certainly would appear to outweigh the perceived limitations primarily hinging on the fact that the development of a good TP tends to be time-consuming. Certain educators may also perceive individual TPs to be such personalised products that it may be difficult to map their peers' experiences to their own situation.

5 School of Informatics Application

The NCI has always recognised the importance of the learner, believing that students learn better in a learner-centered environment. Therefore, faculty at NCI are encouraged to improve upon their teaching where possible and are actively encouraged to employ different techniques which in turn renders learning more effective. As a result it was decided that all Informatics faculty would develop a TP.

There were a number of steps involved.

Firstly, a visiting professor, Dr. Karin Sandal (Director of Teaching and Learning, Ohio University), delivered a number of seminars on Teaching and Learning; one aspect of this was of course the TP. Also, appropriate resources and material was made available to faculty. It was decided that the compilation of the TP would be a continuous process. In order to gain maximum benefit from the TPs time would be set aside at the weekly Informatics meetings to discuss the documents, where each week one faculty member would discuss a particular entry in their document. It was believed that this would improve the level of teaching within the School and encourages faculty members to experiment with different teaching techniques. A number of teaching techniques have arisen from this practice and a sample will now be discussed.

5.1 Dialectic Approach

One teaching technique, which has proven very effective, is the employment of the Dialectic method. The Dialectic method, often referred to, as the Socratic method was prevalent during the medieval era where public debate between masters or professors was common practice. Masters who were highly skilled in oratory and who demonstrated superior logic in the support of their arguments were more likely to attract a larger following of students. It is believed that reason and debate are part of the learning process. When using this method students have the ability and are actively encouraged to question, clarify and challenge. Lectures can be discussion based, the aim being to draw out

the knowledge and to encourage the student to develop reason. Students become actively involved in the lecture, they begin to discover new insights for themselves, they begin to think for themselves and develop a questioning mind.

5.2 Magic Wand

Another teaching method, which is used throughout the School of Informatics, is what is referred to as the Magic Wand. The lecturer first waves the Magic Wand, the lecturer then chooses a student and asks them a particular question. Upon answering the question correctly the student receives the Magic Wand, chooses another student in the class and then asks them a question. If the student who is asked the question does not know the answer then the student asking the question must try to answer it. A student must only be asked one question. This process continues while time permits or until everyone has answered a question. This method of teaching is especially useful for revision at the end of the lecture where by students can be asked questions on topics covered during the lecture. Additionally, it can be used at the end of a semester for revision purposes. The main advantage with this approach is that students are encouraged to participate and be attentive. If a student can ask a question on a particular topic then it means they have some understanding. It encourages a questioning mind and reflection.

5.3 Unique Learning Space

All of our students study Software Development from first year to final year. Software Development is arguably one of the most difficult subjects to teach as students find it difficult to grasp abstract concepts. At NCI learning takes place in a unique learning space, the studio-classroom. The studio-classroom incorporates the best aspects of the traditional learning environment and the computer laboratory. The Studio Classroom has been designed specifically to meet the needs of our students. In class time each student has access to a computer. All computers are on the LAN. The lecturer's computer is also linked to this network and uses a data projector for demonstration purposes. Due to the resources available lectures contain a lot of practical work. Lectures now consist of theory, explanation, instruction by the lecturer and application by the student. This encourages active experimentation and increased participation by the student.

5.4 Game Playing

As mentioned previously, students find it difficult to grasp abstract concepts, when teaching a programming class one of the main objectives is to improve students problem-solving capabilities. One approach which is used is to allow students to play a particular game in class (for example Nim, a game of three piles of matches, each player picks a number of matches from one pile, the loser is the person who takes the last match), once the students have played the game a number of times and are familiar with the process they are encouraged to write

an algorithm, which demonstrates the steps involved. They play the game again to make sure that the algorithm is correct and then they implement the algorithm. It is believed that this approach improves their problem solving capabilities and when implementing the code they have a clear idea of the expected outcome.

5.5 Informal classroom Assessment

Informal classroom assessment is considered both a teaching approach and a set of techniques, which give an indication of what and how students are learning. The techniques are mostly simple, non-graded, anonymous, in-class activities that give both the lecturer and their students useful feedback on the teaching-learning process. Informal classroom assessment differs from tests and other forms of student assessment in that it is aimed at course improvement, rather than at assigning grades. The primary goal is to better understand students' learning to improve the teaching being delivered, or to encourage them to be more diligent where necessary. The benefits of informal classroom assessment are two-fold. The lecturer is provided with a measure of students learning with a much lower investment time, short-term feedback about the day-to-day learning at a time when it is still possible to make modifications and good rapport is established between lecturer and students. Students also benefit from this process as it helps them become better monitors of their own learning, identifies the need to alter study skills and it provides concrete evidence that the instructor cares about their

learning. Informal classroom assessment can be carried out at the end of each alternate teaching week, or at the lecturers discretion. Students are given a 3-minute flash card to fill out. They are asked to respond to the following two questions based on that particular week.

1. List a topic/concept that you have learnt something about 2.
2. What important question remains unanswered for you?

At the beginning of the first class of the next week the lecturer summarises key areas and recaps on problem areas. This in itself acts as a form of revision reinforcing what the students learned the previous week.

6 Conclusion

The application of the aforementioned teaching techniques has proven very successful in the School of Informatics. This is also demonstrated in Student Feedback. The application of the TP has made lecturers aware of the numerous possibilities available in terms of teaching techniques. Innovation is not essential to good teaching, however, being aware of the learner's needs is imperative. It is not the aim that a lecturer would apply all techniques at once; instead appropriate techniques are applied when the need arises.

Teachers for the future must be equipped with effective instructional strategies so that they can continue on their journey of professional development. Reflective practices must be built into the process of how we teach.

“Route and destination must be discovered through the journey itself if you wish to travel to new landsthe key to success lies in the creative activity of making new maps”. [10]

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