Innovative Application & Enrollment Processes for More Informed Students: Reflections on the Benefits of this Innovative Process through the Analytical Lens of Behavioural Science

GERARD CREANER (iD)
SINEAD CREANER (iD)
COLM CREANER (iD)

*Author affiliations can be found in the back matter of this article

ABSTRACT

This paper examines the practical experience and research background of one private training provider with over 10 years' experience reskilling and upskilling mid-career workers with academic qualifications for employment in a growing technical and highly regulated pharmaceutical manufacturing industry. This paper offers insights into how to maximise the efficiency and effectiveness of the admissions, enrollment, induction and orientation process for adult learners looking to commence studies on university accredited continuous professional development (CPD) courses. This process is based on and analysed through the lens of Behavioural Science, while also building upon the work of Dirksen, Colvin Clark, Stolovitch, and Keeps. The data set has been gathered during 2020 and 2021, from 425 adult learner applicants, coming from a variety of educational and employment backgrounds, with 5 to 25 years of work experience.

CORRESPONDING AUTHOR:

Gerard Creaner
GetReskilled, IE
gerard.creaner@getreskilled.com

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INTRODUCTION

The innovative admissions and enrolment process for these adult learners returning to education, has built induction and orientation into the process before the applicant is offered a place on the course, which results in more informed, engaged and enthused students on their first day of this online course.

It minimises the workload on lecturers to bring these new students up to speed on what is required of them during the course, as the applicants who completed this innovative process:

- were able to summarise the module syllabus in their own words,

- knew how many hours they would need to study each week and the dates for their exams,

- were aware of who to contact if they fell behind in their studies or missed an assignment deadline,

- knew what courses they could progress onto after completing this one

In addition, they could identify 3-job roles that they would be able to do, and the salaries associated with them, and 5-companies that they could work for with this qualification for manufacturing safe medicines and vaccines.

Qualitative feedback from the applicants on their satisfaction with the innovative process was gathered, and quantitative data was analysed of the numbers of applicants at each stage of the process, the number who were offered and accepted places on the course, and the number who remained engaged on the course after a 1-month cooling-off period (when they could leave with no penalties).

There were 425 applicants in this case study, and of these:

- 312 (73%) submitted an Interview Form

- 303 were spoken to by Phone

- 276 were offered a place on the course,

- 261 accepted their place and were enrolled

The data from this group will be analysed using the analytical lens and theoretical framework of Behavioural Science, in particular Bounded Rationality, Framing Effect, Simplification Theory and the Dual-System Planner-Doer Model.

This paper is broadly practitioner research using case studies as illustrative of real-world phenomena. The methodology for comparison draws heavily on Bereday's model of comparative styles and their predispositions (Bereday, 1964).

Key findings from this paper include:

- The high satisfaction of adult learners with the innovative admissions and enrolment process for these courses, resulting in more informed and enthused students

- The high percentages of offers and acceptances on the course, as reflected in the low drop-off numbers of those applicants who had completed the detailed Interview Form

- The benefits of this enhanced process for both the lecturers, who are able to concentrate on lecturing, and the universities who will be delivering a great first impression to the students starting their courses

BACKGROUND AND DEMOGRAPHICS

The summary demographics of the group of 425 applicants discussed in this paper are:

- All based in Ireland

- All applied to the same reskilling/upskilling course

- All completed the same admissions, enrollment, orientation and induction process

- 159 female; 266 male

- 240 < 40 years; 185 > 40 years

- 200 employed; 225 unemployed

Applicants came from a range of other industries including manufacturing, food and beverage, finance, administration, healthcare, and construction.

All were eligible to receive Irish Government funding through an upskilling and reskilling initiative – where the Government would have paid either 90% or 100% of their course fees.

The programmes have been delivered online for over 10 years and, as a result, programme delivery was not impacted by the COVID-19 pandemic or the associated social distancing requirements. This is particularly relevant, since Ireland spent the majority of time from March 2020 onward in level 5 lockdown due to the ongoing pandemic (Department of the Taoiseach, 2020).

The programmes are all designed to transition experienced workers from other industries into the pharmaceutical and medical device manufacturing sector, which offers high-paying, high-tech jobs in a stable, secure and growing sector in Ireland (Halligan, 2016).

The 425 applicants break down into three class groups:

- 142 in Class 1 (Completed Process in August 2020, Ireland in Level 4 Lockdown)

- 144 in Class 2 (Completed Process in January 2021, Ireland in Level 5 Lockdown)

- 139 in Class 3 (Completed Process in September 2021, Ireland Open with no restrictions)

CONCEPTUAL FRAMEWORK

This paper is broadly practitioner research using case studies as illustrative of real-world phenomena. The methodology for comparison draws heavily on Bereday's model of comparative styles and their predispositions (Bereday, 1964).

In Bereday's model, 'everyday' comparability is distinguished from socially-scientific or laboratory methods. The everyday comparability approach fits with individualistic practitioner research in that it favours establishing relations between observable facts, noting similarities and graded differences, drawing out universal observations and criteria, and ranking them in terms of similarities and differences.

In everyday comparability, the view is subjectively from within and deliberately without perspectives' detachment. It focuses on group interests, social tensions, impact factors and collective beliefs, patterns, and behaviours as experienced by the authors.

The perspective in this paper is the authors' own as the private training provider of education programmes, mindful of the particular risks of insider research (Rooney, 2005).

In terms of analytical steps, this paper uses Bereday's four stages as illustrated by Jones (1971), as follows:

- Stage 1: Description using a common approach to present facts.

- Stage 2: Interpretation using knowledge other than the author's. These two steps are covered in the Section – "Innovative Admissions, Enrollment, Induction and Orientation Process".

- Stage 3: Juxtaposition for preliminary comparison using a set of relevant criteria. This is covered in the Section – "Results".

- Stage 4: Simultaneous comparison, emergence of conclusions and hypotheses. This is covered in the Section – "Discussion of Results".

THEORETICAL FRAMEWORK
BEHAVIOURAL SCIENCE

The theoretical framework in which this paper is based, is the field of Behavioural Science, which is the study of human motivation, decision making, and actions. It tries to understand how people interpret information; why they make the decisions they do when faced with multiple options; and, ultimately, why people behave the way they do.

The aim of the field is to understand and apply the "human factor" to the decision-making process, rather than building theories on people making simple rational/logical decisions and choices, i.e. the theoretical concept of the logical/rational "Economic Man"

The 4 key behavioural science concepts covered in this paper are:

- **Bounded Rationality** (Simon, 1955) – Humans make decisions to achieve a satisfactory outcome, rather than an optimal one. People do not make "perfect" decisions because decisions are made based on the knowledge an individual has, their ability to process that knowledge, and the amount of time available to make the decision.

- **Framing Effect** (Kahneman & Tversky, 1978) – Explains that the way information is presented to an individual changes how it is interpreted. In other words, if the same information is presented in a positive manner or a negative manner, a person's interpretation of the information and the decisions they make about it, will change.

- **Simplification Theory** (Samson, 2020) – Suggests that an individual is more likely to act on a message if it is easy to understand.

- **Dual System, Planner-Doer Model** (Kahneman, 2012) – Explains self-control in decision making and how humans appear to utilise a dual-system for making decisions, including the concept of delayed gratification.

DIRKSEN, COLVIN CLARK, STOLOVITCH, AND KEEPS

Key findings of Dirksen, Colvin Clark, Stolovitch, and Keeps in the area of understanding how students process teaching materials and assessments, were part of the underpinning theories of this innovative admissions, enrollment, orientation and induction process, including:

- Procedural memory needs practice (Dirksen, 2016)

- When learning something new, new connections are formed in the students brain, and each time that new piece of information or skill is used, the connection is strengthened (Dirksen, 2016)

- Embedded retrieval hooks at the time of learning – opportunities that give the students practise of using the information – make practising and using this skill easier (Colvin Clark, 2010)

- Asking students to implement the information, has the greatest impact in the long term (Stolovitch & Keeps, 2011)

INNOVATIVE ADMISSIONS, ENROLLMENT, INDUCTION AND ORIENTATION PROCESS

This innovative process breaks downs into four stages (detailed below), and the key points are:

- This process occurs before the applicant is offered a place on the programme of study

- The process aims to develop more informed learner cohorts, minimising the workload on lecturers in bringing their new students up to speed with what is expected of them

- The process, while reordering current practice within higher education institutions (admissions, enrollment, orientation and induction) still covers all of these elements in a format that is beneficial for the students

STAGE 4: ENROLLMENT OF CANDIDATES:

Once all of the above is completed successfully, the most suitable candidates are offered a place on the programme. Once the place has been accepted by the candidate, they are enrolled on the course, and are ready and prepared to start their studies immediately.

The underlying theories and how they map to the process outlined are addressed as per the Table 1.

Table 1 Relating Theoretical Framework to the Admissions, Enrollment, Induction and Orientation Process Outline.

THEORY	PROCESSES OUTLINED
Bounded Rationality (Simon, 1955) – Humans make decisions to achieve a satisfactory outcome, rather than an optimal one.	When students are being instructed during induction and orientation after accepting a place on the course, they are not sitting in a vacuum. In other words, the tasks given to them during induction and orientation are being balanced against the other activities and tasks they need/want to complete at the same time. In this instance, the students will aim for the satisfactory decision rather than the optimal one – and if they are already under cognitive strain from the information they are being asked to absorb or the new situation they are in, they will defer reading the information that they feel is going to overload them, as they will feel it is not a priority. However, when interviewing to achieve a goal they have decided upon by themselves, there are very few things that will outrank completing the actions associated with completing and submitting this interview form.
Framing Effect (Kahneman & Tversky, 1978) – Explains that the way information is presented to an individual changes how it is interpreted.	Framing the entire process, from initial phone calls, through reading documentation, answering questions and finally asking questions, as activities to complete before being able to be offered a place on the course – means that the applicants approach each task with an open mindset as something vital to complete to get to their key goal of being offered a place on the course. However, if the students would be asked to complete each of these same activities after accepting a place on the course, the students then view these as an "additional workload" that is being asked of them on top of their studies and therefore switches from being a target to be achieved, to a burden that has to be completed.
Simplification Theory (Samson, 2020) – Suggests that an individual is more likely to act on a message if it is easy to understand.	The interview questionnaire utilises MCQs in key areas which aims to simplify the procedures around contacting someone if they are struggling, requesting assignment extensions, understanding how many hours of study they should be doing, and their academic progression options post completing the course. This makes these processes appear much more simple to action by the student.
Dual System, Planner- Doer Model (Kahneman, 2012) – Explains self- control in decision making, and delayed gratification	When faced with a student handbook to read at the beginning of the module (while containing key information they need), most students are unable to practice the concept of delayed gratification and put off what they are currently doing to read a document that they don't see as relevant to their current situation at that moment in time. However, when reading these documents is part of the interview process to be offered a place on the course, the applicant will override their System 1 thinking and make the decision to read the information.
Procedural memory needs practice (Dirksen, 2016)	Throughout the entire process, the students practice two key skills - (1) How to read documentation and pull the relevant information to answer questions; and (2) the important role of continuous communication between the programme administrators and the students when studying in an online environment, especially the importance of asking questions, which is covered during the one-on-one phone calls during stages one and three.
When learning something new, new connections are formed in the students brain, the connection is strengthened each time the connection pathway is used (Dirksen, 2016)	These adult learners are completing this programme to upskill/reskill into a new industry. These experienced workers are asked in the Interview Form to analyse the skills they already have and are bringing to the industry. In this way they will know their own skills gap and how it can be filled through this programme of study. This is re-enforced in the interview documentation when the applicant is asked to state why they want to work in this industry, what skills they already have that would be applicable to this industry, and what parts of the course they think will be most beneficial to them.
Embedded retrieval hooks at the time of learning make practising and using this skill easier (Colvin Clark, 2010)	The students on this programme are planning on working in a life critical industry, where they are expected to follow strict SOPs. The interview documents include key instructions on how to approach the interview questionnaire. It includes two simple MCQ questions where the students are tested to make sure they are paying attention and can follow instructions. If they answer either of these simple questions incorrectly they had not been paying sufficient attention to what they were asked to do, and so the student is then sent back to the beginning of the form to start again, reinforcing the importance of reading and answering the questions accurately.
Asking students to implement the information has the greatest learning impact in the long term (Stolovitch & Keeps, 2011)	The applicants are asked to implement what they had read to answer the key questions around summarising the module descriptors, noting who to contact if they are struggling or need assignment extensions, noting how many hours of study they are expected to do each week, and list any key assignment or exam dates

DATA COLLECTION

The data gathered for this paper is both quantitative and qualitative. The limitations of quantitative studies – as being potentially statistically relevant due to large data sets, while being

To be able to answer these questions correctly, the applicants had to read and understand the course documentation in detail, and be able to apply it to the questions they were asked.

It can be hypothesised that the adult learners securing places on the course were knowledgeable about the course that they were applying for, and what to do in the event that difficulties arose of either a course or a personal nature.

SKILLS ANALYSIS QUESTIONS

Table 3 documents the number of comprehensive answers that were received from the applicants to the first 3 questions asked in the interview form. These questions were compulsory on the interview form and were therefore answered by everyone. For ease of interpretation, this data has been summarised into the average number of applicants who had a clear and comprehensive set of answers to all three questions.

QUESTIONS ASKED	COMPREHENSIVE RESPONSES			
	CLASS 1 (N = 101)	CLASS 2 (N = 111)	CLASS 3 (N = 100)	TOTAL (N = 312)
1. Why do you wish to pursue a career in the pharmaceutical and/or medical device industries?				
2. What skills do you already hold that you consider valuable to assist you with this goal?	77 (76%)	83 (75%)	70 (70%)	230 (74%)
3. What parts of this course do you think will be particularly helpful in helping you reach this goal?				

Table 3 Number of Applicants with Comprehensive Answers to the Skills Analysis Gap Questions.

It is noticeable that 74% of the responses to these key questions across 312 applicants were very comprehensive. This clearly demonstrates that the majority of the applicants had a good understanding of why they wanted to pursue a career in the pharmaceutical industry, what skills they had already gained in their work experience to date that would be relevant to such a career, and how this programme would add to their skills to help them to make a successful career change into the Pharmaceutical manufacturing sector.

This finding supports the feedback of the applicants to the overall screening process as noted in the next section.

PROCESS FEEDBACK

Table 4 documents the feedback from the applicants on their satisfaction at the end of the interview questionnaire. Despite the fact that this was not a compulsory question on the interview form, over 90% of applicants still answered this question.

	CLASS 1 REACTION (N = 101)	CLASS 2 REACTION (N = 111)	CLASS 3 REACTION (N = 100)
Positive Feedback from Interview form	91%	85%	95%
Applicant Feedback:	"I found the process very professional and thorough. It ensures candidates have a full understanding of the course and future career prospects available to them."		
	"The interview form I thought was a brilliant idea as I am completely up to date on what this course entails in detail. With some courses, these details are not given until the induction day. I know what I am in for and I am mentally prepared."		
	"I have found the application process time consuming but beneficial. You can't start the application without having a good understanding of the course you are applying for."		
	"This has been different, I liked it. It's also a clever way to get students to actually read the syllabus, which, truth be told, I've rarely done in the past unless there was a problem."		

Table 4 Feedback from the Applicants on their Satisfaction with the Process.

Table 4 shows that the vast majority of applicants found the experience as positive, with 91% in Class 1, 85% in Class 2 and 95% in Class 3 reporting this.

The overwhelmingly positive reaction to this in depth interview form lends to the hypothesis that the applicants value an in-depth understanding of the programme, before accepting the offer of a place on it.

DISCUSSION OF RESULTS

Following the juxtaposition of the three groups across the four effectiveness measures (Stage 3 Bereday) in the Results section, a simultaneous comparison is now conducted for the emergence of conclusions and hypotheses in Table 5 (Stage 4 Bereday).

THEORY	THE NEW PRACTICE GOAL	THE RESULTS
Bounded Rationality (Simon, 1955) – Humans make decisions to achieve a satisfactory outcome, rather than an optimal one.	When students are being instructed during induction and orientation after accepting a place on the course, they are not sitting in a vacuum. In other words, the tasks given to them during induction and orientation are being balanced against the other activities and tasks they need/want to complete at the same time. In this instance, the students will aim for the satisfactory decision rather than the optimal one – and if they are already under cognitive strain from the information they are being asked to absorb or the new situation they are in, they will defer reading the information that they feel is going to overload them, as they will feel it is not a priority. However, when interviewing to achieve a goal they have decided upon by themselves, there are very few things that will outrank completing the actions associated with completing and submitting this interview form.	Across the 3 class groups, 73% of applicants completed the tasks outlined in Stage 2 of the process (the detailed interview form). 27% of people self- selected themselves out of the process at this point, deciding not to complete the required tasks to move to Stage 3 of the process. This shows that this process works with the students' innate bounded rationality for achieving a satisfactory outcome.
Framing Effect (Kahneman & Tversky, 1978) – Explains that the way information is presented to an individual changes how it is interpreted.	Framing the entire process, from initial phone calls, through reading documentation, answering questions and finally asking questions, as activities to complete before being able to be offered a place on the course – means that the applicants approach each task with an open mindset as something vital to complete to get to their key goal of being offered a place on the course. However, if the students would be asked to complete each of these same activities after accepting a place on the course, the students then view these as an "additional workload" that is being asked of them on top of their studies and therefore switches from being a target to be achieved, to a burden that has to be completed.	Across the 3 class groups, 97% of applicants completed the telephone call with a member of the team to confirm their understanding – and most importantly to get any underlying questions answered on their part. The re-framing of this activity as part of the interview process meant that 100% of new students were already engaged with a member of the team in a pastoral support manner before even beginning their studies
Simplification Theory (Samson, 2020) – Suggests that an individual is more likely to act on a message if it is easy to understand.	The interview questionnaire utilises MCQs in key areas which aims to simplify the procedures around contacting someone if they are struggling, requesting assignment extensions, understanding how many hours of study they should be doing, and their academic progression options post completing the course. This makes these processes appear much more simple to action by the student.	The simplification around key processes sees that 91% of students who accepted a place on the course were still enrolled in their programme of study after the 1-month cooling off period. This is a particularly impressive figure considering the demographics of the audience, and the fact that two of these class groups commenced their studies during the lockdowns in Ireland
Dual System, Planner-Doer Model (Kahneman, 2012) – Explains self-control in decision making, and delayed gratification	When faced with a student handbook to read at the beginning of the module (while containing key information they need), most students are unable to practice the concept of delayed gratification and put off what they are currently doing to read a document that they don't see as relevant to their current situation at that moment in time. However, when reading these documents is part of the interview process to be offered a place on the course, the applicant will override their System 1 thinking and make the decision to read the information.	Across the 3 groups of applicants, 73% submitted the interview form, which required them to read the student handbook in detail in order to be able to complete it. Therefore, it is hypothesised that all the students who started on the programme, had read, understood, and could action information from the student handbook.
Procedural memory needs practice (Dirksen, 2016)	Throughout the entire process, the students practice two key skills – (1) How to read documentation and pull the relevant information to answer questions; and (2) the important role of continuous communication between the programme administrators and the students when studying in an online environment, especially the importance of asking questions, which is covered during the one-on-one phone calls during stages one and three.	By the conclusion of Stage 3 of the process, before offers for the programme were made, 97% of applicants who submitted an interview form, had already had a telephone conversation with a member of staff for approximately 15 minutes. This started the important continuous communication between staff and students before the programme had begun.
When learning something new, new connections are formed in the students brain, the connection is strengthened each time the connection pathway is used (Dirksen, 2016)	These adult learners are completing this programme to upskill/reskill into a new industry. These experienced workers are asked in the Interview Form to analyse the skills they already have and are bringing to the industry. In this way they will know their own skills gap and how it can be filled through this programme of study. This is re-enforced in the interview documentation when the applicant is asked to state why they want to work in this industry, what skills they already have that would be applicable to this industry, and what parts of the course they think will be most beneficial to them.	Comprehensive answers were received from 74% of the 312 experienced workers to the questions about: 1) why they want to work in this industry, 2) what skills they already have that would be applicable to this industry, 3) what parts of the course they think will be of most benefit to them This clearly demonstrated that the answers to these questions in the Interview Form strengthened their understanding of the relevance of the course to supporting their career plans.

THEORY	THE NEW PRACTICE GOAL	THE RESULTS
Embedded retrieval hooks at the time of learning make practising and using this skill easier (Colvin Clark, 2010)	The students on this programme are planning on working in a life critical industry, where they are expected to follow strict SOPs. The interview documents include key instructions on how to approach the interview questionnaire. It includes two simple MCQ questions where the students are tested to make sure they are paying attention and can follow instructions. If they answer either of these simple questions incorrectly they had not been paying sufficient attention to what they were asked to do, and so the student is then sent back to the beginning of the form to start again, reinforcing the importance of reading and answering the questions accurately.	Across the 3 groups of applicants 73% submitted the required interview form, which required them to be able to follow the instructions in the form. As applicants had to complete the interview form in order to progress to the next stage of the interview process, it is hypothesised that all of the students who started on the programme, had the ability to follow the instructions on how to approach the interview questionnaire.
Asking students to implement the information has the greatest learning impact in the long term (Stolovitch & Keeps, 2011)	The applicants are asked to implement what they had read to answer the key questions around summarising the module descriptors, noting who to contact if they are struggling or need assignment extensions, noting how many hours of study they are expected to do each week, and listing any key assignment or exam dates.	91% of the classes were still engaged with the programme after the one-month cooling off period, with no complaints about the expected workload or settling-in queries about what they were expected to submit/complete each week.

Table 5 links the original theory to what was seen in the results across the three groups of applicants.

Based on the results demonstrated, the investment of time and effort at the appropriate point in the admissions, enrollment, induction and orientation process, delivers the best students for the least effort to both the admissions team and the course delivery team for a programme of study.

This gradual screening of adult learners provides the best possible outcome for themselves, as opposed to being unaware of the various protocols on the course they are informed.

Likewise the lecturers, as opposed to having to waste valuable learning time explaining the basic structures around the programme, are able to concentrate on lecturing.

Finally, the university is able to ensure that the students have a very good experience when starting their courses, making sure that their first impression of the university is a positive one which will last.

Table 5 Comparison of theory to what was seen in the results across the three groups of applicants.

CONCLUSIONS

Maximising the efficiency and effectiveness of the admissions, enrollment, induction and orientation process can be of benefit to the entire third level learning process, as getting the right applicants onto the right courses has knock-on benefits for the students, the lecturers and the academic institutions.

The induction and orientation process is usually well documented in the traditional Student Handbook for a course. However many students actually only read this in detail when they are faced with a problem, which often could have been avoided with a little knowledge and some preparation. As was said by one of the applicants themselves "It's also a clever way to get students to actually read the syllabus, which, truth be told, I've rarely done in the past unless there was a problem".

Building this information into the admissions and enrollment process, and including a quiz on the relevant details for the students to complete, will ensure that all applicants will have read and understood their Student Handbook before they are offered a place on the course. After accepting a place on the course, the applicants will become students and behavioural science tells us that requesting/advising them to read the Student Handbook will not be as successful at that time.

In addition, preparing the students upfront about what is going to be happening on their course increases their confidence about enrolling, (which was confirmed in the qualitative feedback gathered during this innovative process). This innovative admissions and enrollment process has great benefits for the adult learners, one of whom stated in their own words "I know what I am in for and I am mentally prepared". This contributes to the happiness of these adult learners with their overall learning experience, and is captured in their end of course student surveys.