TUTORING TARGETS − THE CHALLENGE OF EVALUATING SUCCESS

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Abstract

The evaluation of student success within a tertiary environment is a challenging endeavour. Success is a multifaceted concept and the achievement of success can be either promoted or prevented by numerous factors. The main challenges include the need to determine how success should be defined and how the contribution of intervention programmes towards success can be established. In this paper we discuss the challenge of interpreting quantitative and qualitative data in order to understand the contributions of two tutoring programmes to student success within the University of Pretoria's Faculty of Humanities. The main aim of the article is to show that, when results are discussed within a programme theory framework (PTF), important strengths and challenges of support programmes could be highlighted. This offers an alternative perspective on the understanding and evaluation of 'success' that differs from the 'one size fits all' model often used.

Keywords: student success; evaluation; programme theory; tutoring systems; tutoring models

1.   INTRODUCTION

The evaluation of success within a tertiary environment is a challenging endeavour (Bialkowsk, 2014; Dean, 1998; McPherson & Schapiro, 2009; Muratori, 2007). An important obstacle in this regard relates to the conceptualisation of success and how this can regulate the significance of interventions and support programmes designed to enable individuals to achieve success. Tutoring systems at tertiary institutions are generally aimed at throughput (Guy & Lownes-Jackson, 2012). In this regard the 2002 University of Pretoria (UP) Tutor Policy states:

> In order to promote successful achievement and adjustment with a view to limiting the drop-out rate, [tutoring] programmes should focus on academic support in a particular subject, as well as on general academic improvement and guidance.

During 2013, the Faculty of Humanities at the University of Pretoria (UP) investigated the impact of various departmental tutoring systems on student success. In line with the UP policy statement, success was conceptualised mainly in terms of student marks. Two questions were explored:

1.   What is the link between Admission Point Score (APS), frequency of tutorial attendance and student success in the first semester?
2.   Which factors contribute to success in selected departmental tutor systems, according to the different role players within those systems?

A mixed methodology was used to gather and analyse the data for each of 16 modules. The data and research population samples varied for the specified research questions. In order to determine the relationship between tutorial attendance and student performance, the following were gathered and analysed: AP scores, continuous evaluation marks, semester and examination marks, and the tutorial attendance records of all the students in a specific module.

With regard to the second question, different role players in five departments were sampled. Questionnaires were administered to students and interviews were conducted with individuals who were representative of all the role players, which included heads of department, lecturers, tutor coordinators and students.

Although tutorial attendance correlated positively with semester marks for 13 of the 16 reports, the fact that the students' marks were used as the only indicators of 'student success' proved to be problematic in certain departments where, despite the absence of a correlation, other positive outcomes related to success could be identified.

This paper aims to emphasise the problems encountered when evaluating student 'success' by highlighting the conceptual issues associated with the construct and the resulting challenges during the interpretation of research results. In proposing an alternative perspective on understanding and evaluating 'success', the authors discuss two diverse departmental tutoring models by using a programme theory framework to determine their efficacy in contributing to student success.

2.   STUDENT SUCCESS

2.1   Defining student success

Defining student success should be the first step towards promoting it (Cuseo, 2007; Muratori, 2007). The difficulties encountered when attempting to define success and determine acceptable measures are particularly salient in research, and Muratori (2007) maintains that it does not seem desirable, fair or even practical to have only one standard for, or one definition of success. Success is a reflection of various dimensions of an individual and is therefore more than just cognitive ability or academic achievement.

However, the definition of this multifaceted concept is often limited to grades, test scores or the mastering of concepts related to a specific programme or course (Bensimon, 2007; Bialkowsk, 2014; Latorre, 2007; Hearn, 2006; Hunter, 2006; Shenhar et al., 2001).

2.2   Evaluating student success

The limitations of the educational research measures used to determine success are linked to the abovementioned limited understanding of this concept. These measures may include grades or credits, participation in activities, or GPA scores. They are generally determined by an institution and are mostly quantitative in nature (Bensimon, 2007; Dean, 1998; Schroeder, 2011). Schroeder (2011:3-4) warns that if success is measured mainly in these terms, present-day success may be misunderstood. Dean (1998) and Hearn (2006) echo this concern by arguing that the significance of an educated person does not rely solely on quantitative measures, but also on qualitative measures relating to interpersonal skills and social responsibility. Success as a multifaceted concept can therefore not be defined or measured by using only a single standard (McPherson & Schapiro 2009; Muratori 2007). In the case of support programmes, such as tutoring, institutionalised, departmentalised or individualised definitions should ultimately form the basis for measuring and evaluating success. For this reason we as authors propose programme theory as a framework for interpreting success.

3.   PROGRAMME THEORY AS A FRAMEWORK FOR INTERPRETATION

Many programme evaluators have emphasised the need to clarify the underlying assumptions about how programmes are expected to work. This process is known as programme theory (Rogers et al., 2000; Rogers, 2008), which is a logical description of the different components of a programme and how they fit together (Wilder Research, 2009; Rogers et al, 2000).

The components of a programme theory framework (PTF) include the following:

- Inputs: resources used to provide the activities
- Activities: services provided by the programme
- Outputs: activities provided in numerical terms
- Outcomes: characteristics of the participants that are expected to change due to participation in the programme (Rossi et al., 2004; Wilder Research 2009).

Programme theory evaluation employs mainly two practices: evaluation can either test the programme theory, or it can be guided by the theory (Rogers et al., 2000:8-10). This article explores mainly the latter and will use programme theory to evaluate the extent to which a tutor programme has contributed to student success.

The main purpose of the research described in the Introduction was to evaluate the efficacy of tutor systems in supporting students to succeed academically. The authors originally operationalised success mainly in terms of semester marks and final marks (quantitative data), but also included a qualitative component to supplement the information obtained. Once the research had been completed, this data was sufficient to derive and describe the relevant programme theories, highlighting the fact that different departments have different conceptions of success, and that their tutoring programmes are underpinned by different programme theories, which ultimately determine whether a programme achieved the intended outcomes. While our findings indicated that the single quantitative measurement (marks) showed some tutoring systems to be successful and others not, the study of the programme theories of those systems highlighted another version of success.

4. METHODOLOGY

The focus of this paper is not on the contribution of tutoring to student success (as the original research discussed in the Introduction), but on the use of programme theory as a way to describe and evaluate tutoring models. Once the original study had been completed, the PTFs of the tutoring programmes in two different departments using very diverse tutoring models were used to package their results. This enabled the researchers to organise the results into smaller units that could be evaluated according to specific targets/programme goals.

In each case study (see Tables 1 and 2), the PTF components were operationalised as follows:

- Inputs: the resources provided to implement the tutoring system. These included funding, tutors, tutor training and facilities
- Activities: the actual choice of 'services' available to students, such as tutorial sessions and consultations
- Outputs: the actual percentage of tutorial sessions attended and the utilisation of consulting hours
- Intermediate outcomes: students' overall performance in relation to their AP scores and attendance of tutorials
- Long-term outcomes: knowledge, skills, attitudes and dispositions that have lasting effects far beyond student marks.

The information on outputs and intermediate outcomes was drawn mainly from the quantitative data sources. The descriptions of all other aspects were derived from data gathered from and findings based on student questionnaires, and from interviews with all the stakeholders.

5. RESULTS AND DISCUSSION

In this section we describe and evaluate the tutoring systems of two departments at hand of their programme theory frameworks.

5.1 Case study 1: Department A (Tutoring model A)

Programme theory description

The main goal of the tutor system for the relevant module in this department is to reduce student attrition by helping students to gain insight into disciplinary texts through practising and developing the 'skills of the discipline'. The target group was defined as all first-year students completing the specific module.

With regard to input, additional funds enabled the department to appoint additional tutors who were well managed, supported and guided by means of various departmental documents outlining tutor responsibilities; additional assistance with administrative tasks; access to an office equipped with a desk and computer; general and department-specific training; continuous guidance by the tutor coordinator during weekly tutorial meetings; relevant resources for preparation; and memoranda for marking.

Almost all aspects of this system's input were highly valued and respondents regarded tutor quality as the mainstay of the tutorial system. Positive descriptions of tutors included 'knowledgeable'; 'supportive, friendly, understanding and willing to help'; 'enthusiastic and passionate'; 'open to questions'; 'possessed good tutoring and communication skills'; and 'punctual and well prepared'. Respondents valued engagement with tutors and commended their efforts. This aspect of the system input is seen as being of irreplaceable value. Furthermore, important guarantors of the successful implementation of the system appeared to be effective management, good communication and clarity regarding the tutors' role in the department.

The main input challenge lies at a broader funding level. Delays in the allocation of tutor funding create uncertainty about the number of tutor appointments for a specific year. A continuous need exists for even more support.

Tutor-support activities are aimed at the optimal use of all the available inputs and are linked directly to the aim in that they focus on practising and developing the 'skills of the discipline'. All tutor efforts are focused on tutorials and no one-on-one consultation hours are scheduled. Attendance of a one-hour tutorial once a week is compulsory for exam entrance and students may not miss more than 20% of their tutorials. Every tutorial involves a tutorial assessment for which answers have to be prepared and submitted in order to be allowed entry. Following the discussion, students are allowed ten minutes for making changes before final submission.

Each assignment covers a primary text and consists of two parts: a) a summary of the text and b) the presentation of an argument. These assignments account for 25% of the semester mark.

There are no fixed consultation times, but consultations can be arranged via email. In order to identify aspects of the work that students struggle with, tutors attend lectures with them.

TABLE 1: Case study 1: Department A (Tutoring model A) - Programme Theory summary

Programme goal	Target group	Process		Outputs	Outcomes	
		Inputs	Activities		Intermediate	Long term
To help students to gain insight into disciplinary texts by practising and developing the 'skills of the discipline' … …with a view to reducing drop-outs.	All first-year students	Tutor appointments Departmental documents outlining tutor responsibilities Additional teaching assistant support Good filing system Departmental training Continued weekly meetings Venues for tutorials Tutor offices **Most valued:** Quality tutor input Well-managed system Good communication between all role players Clarity on tutors' role in the department **Challenges:** Delays in the allocation of tutor funds A need for more tutors	Focused tutorials only (one per week – various options) **No consultations** **Most valued:** The flexible timetable (many tutorial options) Tutors attending lectures 'Insightful' and 'useful' tutorials (compulsory) – regarded as good preparation for tests and examinations Small-group setting with opportunities for interaction and engagement Tutorial assignments (to practise the 'skills of the discipline') Alignment of tutorials, lectures and assessment **Challenges:** Some resistance to assignment completion as a 'ticket to tutorial' attendance Variety in nature of tutorials (interactivity preferred) and marking of assignments	High attendance of tutorials (sample of 172 students): Average attendance 81.2% o Low attendance ($<=77.8\%$) – 43.6% of students o High attendance ($>77.8\%$) – 56.4% of students	The student sample was divided into high- and low-attendance groups. No significant difference between the AP scores of the two groups was noted, but there was a positive relationship between final marks and tutorial attendance.	Improved understanding of the discipline Improved reading and academic writing skills Improved interpersonal and communication skills Improved critical thinking skills Ability to consider various points of view An elevation in the type of questions asked Improved enthusiasm and appreciation for the subject Development of students' world view Affective security Tutors' own growth

Respondents generally found the tutorials stimulating and relevant to the lecturing content. The most valued aspects of the programme theory at the activities level were: the flexible timetable (thanks to the focus on tutorial activities only); the small-group setting, allowing opportunities for interaction, articulation of independent opinion, debate, the consideration of different points of view and hands-on engagement; attendance of lectures by tutors; compulsory tutorials (although not approved of by all); and the thorough preparation for tests and exams provided.

Regarding output, altogether nine tutorials were presented. The mean attendance for the sample of 172 was 81.2%, with 56.4% showing high attendance.

At the intermediate outcomes level, high tutorial attendance was most predictive of high Official Grades (a final mark of 68.2% was obtained). A Spearman Rank Order Correlation indicated a positive relationship between final marks and tutorial attendance. The sample was also divided into groups based on high and low attendance. An independent samples t-test indicated no difference between the two groups' AP scores, but a significant difference between their final marks.

Apart from the positive correlation between student marks and the attendance of tutorials, the research highlighted a number of long-term outcomes that are important for student success. Some of these outcomes are linked directly to the main aim, as discussed above, namely insight into the disciplinary texts and the development of the 'skills of the discipline', which points towards alignment in the programme theory. Depending on the constructive alignment within the module curriculum (Biggs, 1999), these transferable long-term outcomes may or may not correlate with student marks. The relevant tutor research data highlighted the following:

- improved understanding of and insight into the discipline
- improved level of reading and understanding of the subject matter for assignments
- improved academic writing skills
- improved interpersonal and communication skills
- improved critical thinking skills
- awareness and consideration of various points of view
- an elevation in the type of questions asked by students
- improved enthusiasm and appreciation for the subject – encouraging students to 'go further' and delve deeper into the subject
- development of students' outlook on the world
- affective security (not feeling intimidated and overwhelmed)
- tutors' own growth.

The above list points towards various factors other than marks that contribute to long-term student success – including academic fluency, intellectual growth

(also of the tutors) and emotional security. The latter is part of what Randsell (2001) calls 'non-cognitive variables'.

Discussion

The programme theory underpinning this particular model of tutor support shows clear alignment at all levels. A clearly defined and easily identifiable target group is supported throughout the system. Additional inputs in the form of tutors and assistants supporting them are sourced from additional funds. Furthermore, the fact that tutor activities focus only on tutorials (no consultation) allows for the realisation of the goal, which is to practise and develop the 'skills of the discipline'.

The compulsory status of tutorials ensures the desired attendance rate (output). The alignment and focus that are evident throughout the programme theory seem to have the desired result in both intermediate and long-term outcomes. This speaks to various definitions of 'success' – regardless of whether the focus is on throughput; the acquisition of skills; insight into the discipline; emotional security; or the desired outcome of well-rounded life-long learners who are academically fluent and mature.

5.2   Case study 2: Department B (Tutoring model B)

Programme theory description

In this second case study, Department B's goal with using the tutor system is to increase throughput and bridge the gap between school and university by addressing academic skills. While these goals form the main focus, an additional aim is to provide support to those students who hope to obtain higher marks or distinctions. Owing to financial constraints, the target group consists mainly of students from one particular programme/degree who are at risk of failing (<60% for the first test). Although 80% attendance is required, this is difficult to enforce as students can attend on either of two campuses, which makes identification of and control over the target group challenging. Furthermore, attempts to accommodate strong students through consultation diminish the options for providing more targeted tutorials.

With regard to input, the available tutors are divided between the two relevant campuses. Following a once-off general training, they receive guidance and support from the tutor coordinator during weekly meetings. Tutors are provided with offices and venues for tutoring on both campuses. Communication (between tutors and between the tutor coordinator and the tutors) is effective. The most valued aspects in respect of input, are the mere availability of tutor support; the good quality of tutors (they are enthusiastic, professional, knowledgeable and skilled); and the effective management of the system by the department.

Table 2: Case study 2: Department B (Tutoring model B) - Programme Theory summary

Programme goals	Target group	Process		Outputs	Outcomes	
		Input	Activities		Intermediate	Long term
• To increase throughput • To bridge the gap between school and university by addressing academic skills	• Students who scored <60% in their first test • Students who would like to improve their marks / are aiming at distinctions **Challenges:** • Students may attend tutorials on either of two campuses, which complicates identification and the enforcement of attendance. • Attempts to provide additional consultation to strong students are too broad.	• Tutor appointments • System management: • Tutor coordinator's guidance • Training and weekly meetings • Tutor offices • Tutoring venues **Most valued:** • The availability of the tutors • The quality of tutors (enthusiastic, professional and knowledgeable) • Effective management of the system **Challenges:** • Timetable clashes • Communication with regard to tutoring options not clear • Delays in the allocation of tutor funds and venues	• Tutorials (one weekly with options to choose from) developed to address both content and academic skills (e.g. analytical thinking, critical analysis, interpretation and academic writing). • Numerous consultation hour options **Most valued:** • Academic writing skills support • Content discussions • Availability of consulting hours • Interactivity • Emotional support • Support with answering of test questions **Challenges:** • Difference in tutorial styles (a strong preference for interactivity indicated) • A prominent suggestion: a closer link between tutorial content and subject matter	**Campus 1** • Very low attendance of tutorials Average attendance 19.2% - No attendance (0%): 37.1% - Low attendance (5.6% to 11.1%): 35.9% - High attendance (11.11% to 77.8%): 26.9% • Low utilisation of consultations **Campus 2** • Very low attendance of tutorials Average attendance 8.0% - No attendance (0%): 64.7% - Low attendance (5.6% to 11.1%): 6.4% - High attendance (11.11% to 77.8%): 28.8% • Low utilisation of consultations	**Campus 1** Positive linear relationships between: • official grade and AP scores Negative linear relationship between: • official grade and tutorial attendance **Campus 2** Positive linear relationships between: • Official grade and AP scores No relationship between • Official grade and tutorial attendance	Student and tutor respondents confirmed the success of the system and reported improvement in: • academic skills (e.g. preparation for tests); writing skills; understanding of the subject matter; • academic confidence and fluency (confidence to speak up and provide own ideas); and • affective outcomes (enthusiasm and social acclimatisation).

Challenges relating to the system input include time tables clashing with the available tutoring slots (preventing students from benefiting from the system); some uncertainties experienced around the communication of tutoring options; and institution-wide challenges. A need was expressed for more input, especially before tests and exams.

Tutoring activities include that every tutor must present two tutorials per week. Tutorials should be developed to address the most important academic skills, such as analytical thinking, critical analysis, interpretation and academic writing. This focus is in line with the programme's identified goal. However, in order to satisfy the students' needs, time is also allocated to subject readings and content analysis. The fact that tutors have more consultation hours than tutorials highlights a questionable alignment between need, resource inputs and outputs.

Concerning the activities, the aspects that are most highly valued include attention to both skills and subject content; assistance with various assessment activities; and the flexible consulting hours. Respondents indicated a strong preference for interactive small-group tutorials, which allow them to engage, interact, gain different perspectives on a topic, reflect and receive more personal attention, and thus help them to feel less intimidated and become more confident.

Activity challenges relate to the high investment in underutilised consulting hours (if more tutorials were to be offered, this might address the timetable clashes). Other challenges include the differences in tutors' tutorial styles (a strong preference was indicated for interactivity) and a need for closer alignment between tutorial content and subject matter.

Regarding output, the attendance of tutorials for this module was low, as was the utilisation of consultation hours. This output presents a challenge to the system designers and could be linked to the abovementioned problems experienced with defining and controlling the target population and the fact that communication about tutors and tutorials was not always clear.

In the light of all the resource inputs invested in this programme, the intermediate outcomes are disappointing:

> **Campus 1:** AP scores were the strongest predictors of performance. The students who attended the most tutorials had the lowest Official Grades. There was no indication that the attendance of tutorials contributed towards improved overall performance. The sample of 167 students had a mean tutorial attendance of 19.2% and a final mark of 53.2%. The Spearman Rank Order Correlation revealed a negative relationship between tutorial attendance and final marks. The sample was divided into three attendance groups (no, low and high attendance).

A one-way ANOVA indicated that high attenders had significantly lower final marks than low and no attenders, and that there was no significant difference between the AP scores of the groups.

Campus 2: There was no indication that tutorial attendance contributed towards improved overall performance. The sample of 468 students had a mean tutorial attendance of 8.0% and a final mark of 57.6%. The Spearman Rank Order Correlation did not reveal a relationship between the attendance of tutorials and final marks. The sample was also divided into no, low and high attendance groups and a one-way ANOVA indicated that the final marks and the AP scores were equal across these groups.

The intermediate outcomes, as reflected in the statistical analysis, differ quite significantly from the perceived success as averred by respondents in the questionnaire and the interviews. Despite the low attendance rate and the fact that the goal might have been achieved for a limited number of students in the target group, both student and tutor respondents confirmed the success of the system with complete conviction and gave reasons for experiencing 'student success' as a result of factors other than higher scores. The following long-term outcomes (all linking to the programme goal of 'bridging the gap between school and university) were mentioned:

•   improvement of academic skills, such as preparing for tests, writing skills (mentioned repeatedly) and improved ability to analyse critically and write well
•   improved understanding of the subject matter (a theme highlighted frequently in the questionnaire and the interview data)
•   academic confidence and fluency as students have opportunities to speak up and share their ideas in the small-group setting
•   enthusiasm, emotional wellbeing and social acclimatisation (affective outcomes that are crucial to learning), thanks to the safe space provided by tutorials

Discussion

As in the case of Department A, the energy and effort devoted to the tutor system in Department B is evident from the inputs level of the underlying programme theory. The quality of the tutors and the effective management of the system were highlighted as some of the system's most valued aspects; therefore the intermediate statistical outcomes are very disappointing. However, a careful consideration of the programme theory sheds some light on possible gaps and misalignment in this tutoring system: First, the target group identification seems to be unclear, which makes it difficult to effectively select and control the group. Second, the focus of the support activities seems to be distorted. Too much focus on consultation might result in less time for additional tutorials, which could result in timetables and tutorial slot options

not being sufficiently flexible. This would in turn have a negative effect on the outputs (the attendance of tutorials). Despite this, the initial goal and the long-term outcomes appear to be well aligned and it seems as if by gaining a better understanding of the subject matter, improving academic skills and developing academic confidence and affective security, the goal of 'bridging the gap between school and university' was indeed achieved. This links with Hunter (2006) and Muratori's (2007) argument that success cannot be defined by a single marker, but encompasses the whole student – in other words, it is determined by more than cognitive ability or academic achievement.

6.   CONCLUSION AND RECOMMENDATIONS

Since tutoring programme goals are unique for every tutoring model/system, no single definition of success can be applied to all courses or programmes. The authors therefore propose the use of a multifactorial approach to defining and evaluating success – emphasising the need to include both academic and non-academic variables (Cuseo, 2007; Hakimi, Hejazi & Lavasani, 2011; Hunter, 2006; Muratori, 2007; Parker et al., 2004). In this paper, we use Programme Theory to describe two diverse tutoring models in two different departments. Focusing on their respective outcomes in relation to the intended goals, we argue that the outcomes of support programmes are highly dependent on the programme theory. A 'one size fits all' evaluation of student success that focuses solely on marks fails to provide a nuanced account of long-term success. Factors within individual systems that affect sustained student academic growth and emotional wellbeing are important for future success. Even if intermediate outcomes are not achieved, long-term outcomes should still be considered before definite conclusions are drawn about student success.

We specifically propose the use of Programme Theory as a framework for evaluating tutor systems as it highlights the main areas of value in the system, as well as possible shortcomings that may contribute to failure to achieve the intended goal. The use of such a multifactorial approach and framework, which turns inwards for nuanced evaluation criteria, resonates well with Muratori's (2007) claim that no definition of success can be correct or incorrect as success is ultimately 'in the eye of the beholder'.

The authors acknowledge that a once-off evaluation limits the conclusions made and that the assessment of success at a single point in time or in a single academic year is not ideal. It is therefore recommended that future research should cover a longer term (Parker et al., 2004; Shenhar et al., 2001), with a follow-up of the (intermediate and long-term) outcomes over a period of two to three years.

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