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Critical reflections on collecting class attendance registers in large psychology classes

There is a growing feeling amongst many higher education institutions in South Africa that offer face-to-face instruction that students are not regularly attending lectures. The general impression amongst academic staff is that the lack of attendance at lectures is adversely affecting students' academic performance. In this study we reflect on the impact of using data collectors to collect data on lecture attendance. In particular, we focus on some of the important issues that emerged when collecting data on class attendance through the use of class registers. These issues are discussed in light of possible implications for the larger research project and in terms of the academic endeavour. This article closes with suggestions for improving the data collection process that might prove useful for other researchers wishing to work in this area.

Kritiese refleksies op versamel van klasbywoning registreer in groot sielkunde klasse

Daar is 'n groeiende gevoel tussen baie hoër opvoedkundige instansies in Suid-Afrika wat eerstehandse instruksie voorsien, dat studente nie gereeld lesings bywoon nie. Die algemene indruk onder akademiese personeel is dat die gebrek aan bywoning van lesings 'n nadelige effek op studente se akademiese prestasie het. In hierdie studie ons dink op die impakt van die gebruik van data invorderaars om data op lesing bywoning te kollekteer. In die besonder, word daar gefokus op sommige van die belangrikste kwessies wat te voorskyn gekom het toe data oor klasbywoning deur die gebruikmaking van klasregisters versamel is. Hierdie kwessies word bespreek in die lig van moontlike implikasies vir die groter navorsingsprojek en in terme van dié akademiese onderneming. Hierdie artikel sluit af met aanbevelings vir die verbetering van die data-insamelingsproses wat waardevol mag wees vir die ander navorsers wie wens om in die area te werk.

1. Introduction

The purpose of this study is to critically reflect on the process of collecting data on class attendance in large psychology classes. Attendance data was collected as part of a larger research project that sought to understand whether class attendance was related to academic performance, the reasons for non-attendance, and the methods that students use to obtain lecture notes and to prepare for assignments and examinations. The attendance data forms a central part of this larger research project. Given the importance of the attendance data on our subsequent conclusions about students and the nature of teaching and learning in undergraduate psychology classes, we thought that it was imperative to reflect on the nature and process of data collection. The focus on data collection is based on the assumption discussed by Holzman and Newman (1993) in their interpretation of the work of Vygotsky. Newman and Holzman (1993) argue that researchers should always interrogate their research tools because the tools used determine the results that are generated, hence their discussion of Vygotsky's tool-and-result framework. It is, therefore, essential that the ways in which the lecture attendance data were collected are interrogated, so that caution is exercised when students are subsequently labeled.

The University of the Witwatersrand's primary method of instruction is through full-time, contact lectures, supported by contact tutorials. This mode of delivery assumes that students frequently attend and actively participate in lectures, tutorials, and seminars. Lectures in the psychology department at this institution are characterised by larger classes than are generally seen in international contexts (Allers & Vreken, 2005: 853-63; Kember & Wong, 2000: 69-97; Nel & Dreyer, 2005: 129-43; Williams, Hodge, Garza & Breaux, 1999: 233-51). Psychology classes are often in excess of 250 students from diverse academic and cultural backgrounds. Apart from first year tutorials and some second year tutorials in a research design course, attendance at lectures in psychology classes at this University is not compulsory. However, many of the teaching and learning interventions that have been implemented in the psychology department (Greenop, 2007: 361-7; Israel, Pitman & Greyling, 2007: 375-82; Kiguwa & Silva, 2007: 354-60; Thatcher, 2007: 348-53) have been based on the assumption that students attend lectures regularly.

Anecdotal evidence from members of staff in the psychology department regarding poor attendance and participation in lectures led to a preliminary study being conducted (Thatcher, Fridjhon & Cockcroft, 2007: 656-60). In the exploratory study, undertaken in 2006, nine random registers were collected in a second year class over a seven week period (the lecturer distributed the official class register to the class and asked students to sign next to their student number) and related to students' academic performance. An analysis of this data suggested that most students did not regularly attend lectures and that the rate of attendance was significantly related to academic performance. Most studies find significant relationships between lecture attendance and academic performance

measures (Devadoss & Foltz, 1996: 499-507; Durden & Ellis, 1995: 343-6; Gatherer & Manning, 1998: 121-3; Kirby & McElroy, 2003: 311-26; Park & Kerr, 1990: 101-11) including in psychology classes (Dollinger, Matyja & Huber, 2008: 872-85; Federici & Schuerger, 1976: 172-4; Grabe, Christopherson & Douglas, 2005: 295-308; Gunn, 1993: 201-2; Levine, 1992; Nye, Crooks, Powley & Tripp, 1984: 85-97; Rose, Hall, Bolen, & Webster, 1996: 163-71; Slem, 1983; Van Blerkom, 1996). However, other studies found that lecture attendance was uncorrelated with academic performance (Berenson, Carter & Norwood, 1992: 55-8; Dolnicar, 2005: 103-15; Hyde & Flournoy, 1986: 175-6). These inconsistencies, and the fact that the significant correlations are usually modest, could be attributed to numerous performance-related factors (i.e. student ability, motivation, and learning style, and lecturer skills) or to the various attendance data collection methods utilised. Studies have examined the moderating effects of different performance-related factors (Durden & Ellis, 1995: 343-6; Kember, Jamieson, Pomfret & Wong, 1995: 329-43; Krohn & O'Connor, 2005: 3-28; Rodgers, 2001: 284-95; Romer, 1983: 167-74; Slem, 1983; Stanca, 2006: 251-66) but no studies have systematically explored the impact that the method of collecting attendance data might have on these relationships.

1.1. Collecting data on students' class attendance

In reviewing previous studies, the most frequently cited method used to assess class attendance is through students' self-reports. The most common self-report method was through questionnaires (Davidovitch & Soen, 2006: 691-703; Dolnicar, 2005: 103-15; Durden & Ellis, 1995: 343-6; Federici & Schueger, 1976: 172-4; Galichon & Friedman, 1995: 357-60; Grabe et al, 2005: 295-308; Kottasz, 2005: 5-16; Longhurst, 1999: 61-79; Moore, 2003: 367-71; Park & Kerr, 1990: 101-11; Rodgers, 2001: 284-95; Stanca, 2006: 251-66; Van Blerkom, 1992: 487-94) where students were asked to indicate on some sort of scale how frequently they attended (or were absent from) lectures. In most cases, the researchers asked students to estimate their attendances/absences over the entire teaching period under investigation (usually a teaching semester), although in one instance the researchers asked students to indicate their absences over the preceding teaching week (Longhurst, 1999: 61-79) and in another study for a period of one month (Galichon & Friedman, 1985: 257-60). Hunter and Tetley (1999) recorded attendance via an interview asking students to indicate their absences from lectures in the previous week. The second most common self-report method used some form of "diary study", where students reported time spent performing various academic and non-academic activities over one week (Kember et al, 1995: 329-343) or over the entire teaching semester (Krohn & O'Connor, 2005: 3-28). Self-report methods are problematic in that they rely on the accurate and honest recall (or honest recording in the case of diary studies) by the students. Dollinger et al (2008: 872-85) noted that students' self-reports are also open to social desirability biases. Nye et al (1984: 85-97) used a variant of the diary study method that involved asking students to submit their (dated) notes for each lecture that they attended. This method allowed the researchers to

corroborate self-reported attendance (i.e. the submitted lecture notes) with what was actually covered in class during a particular lecture. Nye et al (1984: 85-97) recorded students as absent either when they did not submit notes for a particular lecture or where the submitted notes were photocopies of another student's original notes. A similar way of collecting attendance data was used by Slem (1993). In Slem's (1993) study, absenteeism instances were determined by the non-submission of assignments or tests in class. This assumes that the tests or assignments would be completed during a lecture period and that students did not submit work for their colleagues.

The second most common method used to assess lecture attendance is a direct collection measure. This method usually collects lecture attendance data during each class through distributing a class list for students to indicate their attendance (Chung, 2004: 48-58; Gendron & Pieper, 2005; Gump, 2006: 39-46; Gunn, 1993: 201-2; Martins & Walker, 2006; Newman, Schuman, Fields & Nunez, 1981: 361-1; Van Blerkom, 1992: 487-94; Van Walbeek, 2004: 861-83). Again, this method relies on students' honesty in completing the registers only for themselves (and not for other students in the class). Van Walbeek (2004: 861-83) reported that this method resulted in the over-reporting of attendance as some students signed the register for friends who did not attend a particular lecture. In order to get around that problem, Van Walbeek (2004: 861-83) used blank sheets for students to write their names, student numbers, and signatures. In Chung (2004: 48-58) and Gump's (2006: 39-46) studies the lecturer collected the attendance register, whereas in Shimoff and Catania's (2001: 192-5) study the class register was collected by a teaching assistant. In Martins and Walker's (2006) study they claimed that the class registers collected by class tutors (who were also teaching assistants in most cases) were more reliable than self-reported attendance measures. Shimoff and Catania's (2001; 192-5) study specifically explored the influence of using in-class registers (although not the impact of using a teaching assistant). They found that the act of collecting class registers increased student attendance and resulted in improved academic performance. However, none of the studies reflect on the influence of the actual person who collected the register on the attendance dynamics. The other studies failed to mention who administered the attendance registers (i.e. Gendron & Pieper, 2005; Gunn, 1993: 201-2; Van Blerkom, 1992: 487-94; Van Walbeek, 2004: 861-83).

One variant of the direct recording method is performing a "roll-call" (Hughes, 2005: 41-9; Marburger, 2001: 99-110). However, this method is only feasible where the class size is small and the recorder either knows the names of each student in the class, students are assigned a specific seat in class (Newman et al, 1981: 360-1) or calling out the names in class does not take up too much of the class lecturing time. Hughes (2005: 41-9) reported that lecturers were concerned that taking a class register would place added responsibility on the lecturer and would be time consuming. In smaller classes it may be possible for a lecturer, tutor, teaching assistant, or administrator (e.g. Hughes, 2005: 41-9 used

an “allocation officer”) to recognise when a student is absent from class, although this would rely on the memory accuracy of the recorder. In a further variant of the direct recording method, some researchers (Devadoss & Foltz, 1996: 499-507; Romer, 1993: 167-74) relied on simple headcounts of the numbers of students in class to measure attendance rates. This method can only be used for estimating attendance and is not reliable when trying to relate to any individual student variable (such as individual performance or demographic variables).

A surprising number of studies failed to indicate how that data was collected (Berenson et al, 1992: 55-8; Cohn & Johnson, 2006: 211-33; Dollinger et al, 2008: 872-85; Gatherer & Manning, 1998: 121-3; Kirby & McElroy, 2003: 311-26; Levine, 1992; Rose et al, 1996: 163-71; Schmidt, 1983: 23-8). For example, Berenson et al (1992: 55-8) reported that “Informal [attendance] data were collected from instructors” (p. 56) without indicating how the instructors collected attendance data. It may also be possible to use electronic devices to determine lecture attendance. This method would assume that students bring their (own) electronic tracking devices (e.g. a student card) to the lecture (i.e. that they do not bring tracking devices for friends or colleagues) and that the electronic recording system does not impede entrance into a lecture venue. No studies reviewed, reported using an electronic monitoring system to record lecture attendance

1.2. Research aim

Regardless of the methods used to assess student attendance, only four studies (i.e. Dollinger et al, 2008: 872-85, Hughes, 2005: 41-9, Martins & Walker, 2006, and Van Walbeek, 2004: 861-83) have provided any critical commentary on the chosen method of data collection. Further, it has been shown that forcing students to attend lectures by making lectures compulsory may, in fact, have an adverse effect on student performance (Burns & Ludlow, 2005: 127-38; Hyde & Flournoy, 1986: 175-6; St Clair, 1999: 171-80). St Clair (1999: 171-80) suggested that mandatory lectures have the effect of reducing student motivation which, in turn, reduces levels of academic performance. This implies that whatever strategy one uses to collect data about student attendance or absence must be relatively unobtrusive or carefully explained to students. Conversely, Shimoff and Catania (2001; 192-5) found that overtly collecting attendance registers had the effect of increasing class attendance and academic performance. In this study we aim to explore the processes and experiences of data collection, primarily from the perspective of the data collectors.

2. Method

2.1. Design

Ontologically, this study has adopted a realist position. Thus, the external world or social plane is believed to exist outside of the individual and can be known by

the individual (Harre, 1981: 33-46). This external world is both complex and stratified and knowledge of the external world is a social and historical product (Scheurich, 1997). However, at any particular point in the observation of the external world, the individual observer may not necessarily provide an accurate account of the true nature of this external world (Cameron, Frazer, Harvey, Rampton & Richardson, 1999: 13-26). The realist approach, therefore, distinguishes between the individuals who observe (in this instance, the data collectors) and the situation that is observed (Payne & Payne, 2004).

How the individual knows the external, social world, or the epistemological position of the study, is constructivist. Accordingly, individuals progressively construct how they know the world, and what rules govern their knowing (Scheurich, 1997). The current study may be located within a social constructionist approach (Payne & Payne, 2004). The individual's construction of the external world is a dialectical process. Thus, our knowledge of the external world is an approximation of the social plane and we are constantly engaged in the construction and reconstruction of our representations of the external world. We, thus, acknowledge from the outset an important assumption, that the process of data collection had an influence on the data collectors as they progressively constructed their views about students' lecture attendance.

This dialectical-conflictual framework of inquiry has been operationalised through the triangulation of research methods (Kelly, 1999: 27-39). The current study has adopted an approach of pluralism in which several or mixed-methods were utilized (Payne & Payne, 2004). This triangulation involved the analysis of multiple perspectives from multiple observers (Patton, 1980) and an examination of the social context in which these observers were located (Scriven, 1991). Secondly, multiple sources of data (i.e. attendance registers, self-reported attendance data, and a reflective journal) were utilized. Finally, both quantitative and qualitative methods of data collection were used (Payne & Payne, 2004). The current study is "a fully integrated design in which the study's two parts (quantitative and qualitative) are implemented simultaneously with neither side dominant" (Padgett, 2004: 35-62, p.35).

This study adopted aspects of analytic auto-ethnography (Anderson, 2006: 373-95). This approach combines reflexive ethnography with personal narrative (Ellis & Bochner, 2003: 199-258; Marcus, 1994: 563-74) to collect and analyse data for the reflective journal. The analytic auto-ethnographic approach is distinguished from the evocative auto-ethnographic approach that focuses on "thick description"; a literary approach that attempts to impart feeling/emotion within the writing style (Geertz, 2000: 3-30). Analytic auto-ethnography is based on five conditions (Anderson, 2006: 373-95): (1) that the reporter is a member of the research team (in this study we report data from the journal of two data collectors); (2) that the reporter maintains analytic reflexivity; (3) that the reporter is visible as such within the narrative; (4) that the narrative incorporates dialogue

from informants other than the self; and (5) that the narrative is committed to a theoretical analysis.

2.2. Data

While this study is part of a larger project on lecture attendance (also including data from student focus groups, student questionnaires, student telephonic interviews, and lecturer interviews), the focus of this article is on the collection of attendance registers. The primary data under investigation in this study were therefore the actual attendance register forms, the reflective journal written by the two data collectors, and one component of the student questionnaires administered to students at the end of the teaching term (i.e. a question on self-reported attendance).

2.2.1. Attendance registers

Attendance registers were collected during the first term of the 2007 academic year (i.e. 13 weeks of lectures). Registers were collected in one class each at the first year, second year, and third year levels of study. The class registers were collected in class by the two data collectors approximately twice a week for each level of study. At the start of each lecture where a register was taken, for the first few weeks of term, the data collectors read out the purpose of the class registers from a prepared project statement At the end of the lecture the data collectors reminded students to sign the register. The attendance registers were collected systematically within each year of study so that data for different days and different times of day were collected. The attendance registers were time consuming to collect and therefore only the largest class at each level of study was chosen. Due to large numbers of registered students there was more than one class taught at each year of study. At the first and second year of study the different classes followed an identical curriculum, but were usually taught using a different time slot (i.e. classes were taught at different times of day depending on the different days of the week). At first year level, two of the classes were taught on the same time slot, but at two different venues. These classes were divided according to surname. At the third year of study, the students were given a choice of classes based on an area of specialisation. The two classes with an industrial/organisational psychology focus were chosen because students were most likely to choose these two courses for both halves of the first term. Participation in the study was voluntary and students may have chosen not to participate or to withdraw at any time. The class sizes, based on students who signed at least one class register, were 329 first year students, 246 second year students, and 133 third year students.

The purpose of the attendance registers is fairly self-evident, in that they were designed to measure individual students' attendance of lectures. Before designing the attendance registers we consulted the literature on the best method for the format of these registers. Only Van Walbeek (2004: 861-63) reported sufficient detail where he suggested that using student names on the

register resulted in over-reporting of attendance as it enabled students to sign for their friends. In the pilot study Thatcher et al (2007: 656-60) received anecdotal evidence that supported this claim. The nature of the registers therefore evolved over the course of the pilot study and research project. Initially, the registers were constructed by the data collectors who distributed blank forms in each class under investigation and asked student attendees to write their name, student numbers, and signature. Once an initial list had been compiled by the data collectors, this compiled list was distributed in class, sorted by student number only in order to prevent students signing for their colleagues. At this stage, any new attendees were requested to add their names, student numbers, and signatures at the bottom of the list and these lists were amended by the data collectors.

2.2.2. Self-reported attendance data from the questionnaires

Questionnaires were distributed (and collected) in class by the data collectors in the last week of term. The questionnaires were primarily used to collect data on students' reasons for their attendance and non-attendance at lectures, but also contained a question asking students to self-report their psychology class attendance during the teaching term. The self-reported attendance question was an open-ended question asking students how often they had attended lectures in the particular psychology class under investigation. The questionnaire was administered in each class during the last week of term. The numbers of returned questionnaires (based on the number of students who responded to the self-reported attendance question) were 169 first year students, 101 second year students and 68 third year students.

2.2.2. Reflective journal

During the collection of the attendance registers the data collectors recorded extensive notes, in the form of a reflective journal. These notes were written in both a structured and an unstructured manner. In terms of the structured form of reflection, observations about: (i) class attendance, (ii) lecturing styles, (iii) interaction style between the lecturer and the class, (iv) interactions between the lecturer, data collectors, and the students, and (v) comments made by students and lecturers to data collectors regarding the research. The unstructured form of reflection included the data collectors' own thoughts about the process and the limitations discovered by some of the methodological techniques. These thoughts typically included observations about any event occurring in the lectures. Often, these notes were a dialogue between the two data collectors, discussing an issue that had emerged in the class. Both the structured and unstructured forms of reflective observations form a subjective critique of the attendance register data collection processes and procedures.

2.3 Data Collectors

Data collectors were used to collect the attendance registers because we anticipated that they would act as an impartial and non-threatening third party. If

the lecturers administered the class registers this might have created an undesirable dynamic between the lecturers and students and might have been an extra administrative burden on the lecturers. Both the data collectors were third year Master's students in clinical psychology, completing their research reports. The two data collectors (one white male and one white female) were both third year Master's students in clinical psychology, completing their research reports. Their previous clinical training was considered valuable in informing their reflexive observations and insights on the interactions taking place during the data collection. However, we were aware that the skills required for individual therapy (i.e. a one-on-one interaction), may be different from the skills required to reflect on the collection of data in a large research project. The male data collector (27 years old) had completed his one-year clinical psychology internship and was in the process of writing up his research report before sitting for his professional board examination [DC1]. The female data collector (29 years old) was a foreign student who had completed her clinical psychology coursework and was in the process of writing up her research report before starting her clinical psychology internship [DC2]. Mature students were purposefully chosen as data collectors because they could arguably relate to the issues faced by students and yet were sufficiently distant from the problems related to lecture-based studies.

2.4. Data Analysis

Only one question (self-reported attendance) from the questionnaires was analysed. This open-ended question was content-analysed to create 6 categories that broadly reflected the attendance register groups. Self-reported attendance ranged from "Always attend or never miss a lecture" (i.e. 14 to 16 attendance register appearances) to "Not often or rarely attend" (i.e. 1 to 5 attendance register appearances).

The impact of data collection on the process of teaching and learning was the broad framework on which the analysis was based. Accordingly, the data analysis of the reflective journal was conducted based on a Vygotskian portrayal of the nature and purpose of lectures. The Vygotskian description of lectures argues that they constitute a social activity, or interaction between differentially powered individuals (namely, the lecturer and a massified group of students). The social activity occurs through semiotic mediation, for the purposes of knowledge and skills transmission. Lecturers are considered "adults" in the culture of critical thinking in psychology, with students being novices, who are systematically inducted into the culture of higher education. Learning involves a complex combination of students' motivations, interests, personality (affect), cognitive functioning, and cognitive strategies used to solve cultural tasks (e.g. attending lectures or writing an argument). The tensions between lecturers and students in the process of teaching and learning was thus the primary analytic mechanism used to evaluate the attendance registers, but particularly the reflective journal of the two data collectors. The reflective journal was consulted

several times during the analysis phase; first to extract comments related to the data collection process and then through several iterations to group these comments into general themes (i.e. thematic content analysis) using open coding (Berg, 1995). The analysis was repeated until all comments had been assigned a theme and no new themes emerged.

3. Results

3.1 Attendance registers compared to self-reported attendance

Comparing the class registers to the self-reported attendance it is evident that the students tended to over-report their attendances or under-report their absences. The over-reporting of attendance was most notable in the first year class, but was also strongly evident in the second and third year classes. As Dollinger et al (2008: 872-85) noted, self-reported attendance is open to retrospective memory deficits (i.e. inaccurate recall of lectures actually attended) and social desirability biases (i.e. students wanting to be viewed by the researchers in a favourable manner). The two sets of data are obviously not directly comparable. Self-reported attendance was gathered from students who actually attended the lecture where the questionnaire data was collected whereas the attendance registers were collected randomly throughout the teaching term based on completing the register in class. One would therefore expect the poorest attendance categories to be under-represented in the self-reported attendance data. The extent of the under-reporting of attendance is understandable when accounting for the response rates to the questionnaires distributed in class (i.e. 51% response rate for the first year class, 41% response rate for the second year class, and 51% response rate for the third year class). Large proportions of each of the classes were absent or declined to respond (between 49% and 59% of each class) to the questionnaire on the days of administration.

Table 1. Attendance registers (N=329) vs. self-reported attendance (N=169) at first year.

Descriptor		**Attendance register**		**Self-reported attendance**	
Attendance register (N=15)	**Self-report category**	**N**	**%**	**N**	**%**
14-15	Always attend, never miss a lecture	22	7	123	72
13-12	Try to make all, miss 1 or 2 lectures	41	12	15	9
10-11	Very often attend, regularly attend	50	15	9	5
8-9	Miss a standard lecture a week	61	19	3	2
6-7	Infrequently attend, miss about half	40	12	--	--
1-5	Not often, rarely attend	115	35	--	--

Table 2. Attendance registers (N=246) vs. self-reported attendance (N=101) at second year.

Descriptor		Attendance register		Self-reported attendance	
Attendance register (N=15)	**Self-report category**	**N**	**%**	**N**	**%**
14-16	Always attend, never miss a lecture	36	15	51	50
13-12	Try to make all, miss 1 or 2 lectures	45	19	19	19
10-11	Very often attend, regularly attend	38	15	22	22
8-9	Miss a standard lecture a week	32	13	4	4
6-7	Infrequently attend, miss about half	28	11	4	4
1-5	Not often, rarely attend	67	27	1	1

Table 3. Attendance registers (N=133) vs. self-reported attendance (N=68) at third year.

Descriptor		Attendance register		Self-reported attendance	
Attendance register (N=15)	**Self-report category**	**N**	**%**	**N**	**%**
14-16	Always attend, never miss a lecture	13	10	30	43
13-12	Try to make all, miss 1 or 2 lectures	19	14	14	21
10-11	Very often attend, regularly attend	18	14	6	9
8-9	Miss a standard lecture a week	25	19	14	21
6-7	Infrequently attend, miss about half	12	9	2	3
1-5	Not often, rarely attend	46	34	2	3

3.2. Problems with the format and process of the attendance registers

A total of 140 comments from the 47 lectures where registers were taken reflected on the methods and procedures used to collect attendance data. Based on a thematic content analysis of the reflective journal, eight themes emerged, related to data collection using attendance registers. Four of these themes were based around the format and practical procedures of collecting attendance data. A further four themes were concerned with lecture-based interaction issues. These will be discussed in the following section.

3.2.1 Format and accuracy of the attendance register

When the attendance register format changed from a hand-written list (in the first few weeks of data collection) to the printed list (for the remainder of the term) with student numbers, a data collector "explained to the class how the new register works" and asked them to "write their name on the back if their name wasn't on the list", but also noted that "many students did not listen/appeared uninterested" [DC1, psyc3]. The data collectors also noticed that the printed list was considered by the students to be "easier/more accessible" [DC1, psyc2]. The completion of attendance registers generally did not appear to distract the students during the lectures although it was noted that the attendance register "moved more slowly" [DC2, psyc3] when the lecturer covered more content.

3.2.2 Incompleteness of the attendance register

The most frequently noted point with regards to the incompleteness of the register related to students either arriving late for class or leaving early. For example: “People still walking in 10 minutes late, 15 minutes late, 20 minutes late” [DC2, psyc1] and by implication “might be excluded from the register” [DC1, psyc3]. In another example “one guy walks in 20 minutes late without pen or paper. Very interesting! He leaves 10 minutes later” [DC2, psyc3]. In some instances late attendance may not have had much affect on the data collection process; for example when students “filtered in up to 15 minutes into the lecture” [DC1, psyc2]. However, in another instance a student would probably not have been recorded as attending the lecture even though nominal “attendance” occurred: a “Girl walks in 45 minutes late! Wow! What’s the use?” [DC2, psyc3]. It was possible that students who arrive late might not receive the attendance register. It should also be noted that these students would also miss substantial parts of the lectures.

One solution suggested by the data collectors would be to change the format of the register: “Ideally we should have another column with ‘time in’” [DC2, psyc3]. The data collectors reflected that the attendance registers only collected data on whether students were physically present when the registers reached them in class. If a student arrived late, after the attendance register had circulated, attendance would only be recorded when an announcement was made at the end of the class. If a student left the lecture before the attendance register had reached them they would be recorded as absent even though they had attended some of the lecture. The data collectors noted that the attendance registers might “therefore be a conflicting variable” [DC1, psyc1] that doesn’t capture the actual engagement with the lecture material. This point is fundamental to understanding what is meant by “attendance” and the purpose of a lecture. Students who arrive late or depart early are clearly not cognitively “attending” to the whole lecture, but students who are physically present in class might not be “attending” to the lecture either. The data collectors debated whether they should give the attendance register to students who arrived in class after the attendance register had circulated: “I felt hesitant giving it [the attendance register] to him given that he had missed half the lecture” [DC1, psyc2] to which the second data collector asked “This really is a good point as what are we measuring and what is our time cut-off?” [DC2]. In addition, a data collector also noted that students who leave early cause a distraction in the lecture: “Student just walks out of the lecture. [This] outside distraction draws students’ attention” [DC1, psyc2].

It was also noted that some students chose not to sign registers, or signed some of the time, but not at other times: “one student didn’t want to fill in the register … ‘I did this last week already’” [DC2, psyc3] and verified by the second data collector: “yes, that’s very frustrating” [DC1]. Consequently, we cannot claim that the registers are an accurate reflection of lecture attendance because students may have arrived after the register had circulated around the class, or had simply chosen not to sign the register even when it did reach them in class.

3.2.3 Distribution of the attendance register in class

The data collectors handed the attendance registers out themselves and attempted to spread these as broadly as possible around the class to allow students an equal opportunity to complete the register. Even with these precautions, it was apparent that attendance registers sometimes did not reach each and every student: “Registers don’t seem to permeate the class very well. They appear to miss some students” [DC1, psyc3]. Where this was noticed by the data collectors they made an announcement at the end of the lecture to remind students to sign the register. Students sometimes didn’t sign the register because they were “so busy taking notes” [DC2, psyc3]. Collecting signed registers required active engagement by the data collectors and the students, to ensure that the registers reached each student during the class and that they were safely returned to the data collectors. In one instance a data collector expressed “difficult getting the registers back from the students” [DC1, psyc3] because they had been left on a desk.

3.2.4 Aligning the attendance register with other databases: the problem of students who choose lecturers

The broader research objectives meant that we needed to align the class registers with performance and demographic data. The alignment with existing databases was complicated somewhat due to the fact that the university migrated to a new database system at the start of 2007. The new database system only allowed for one class list for each course, and did not reflect differences between timetable slots or when classes were split for logistical purposes to be accommodated in different venues. The lack of alignment was most striking in the first year class where the largest class was split into two classes, according to surname, on the same timetable slot and a data collector hypothesized that “at least a quarter [of the students] went to other lectures, not ones they were supposed to be in” [DC2, psyc1]. Some students expressed that they had simply chosen for themselves which class to attend based on which lecturer was perceived as more competent. For example: “A student behind me says she would like to come to this class. This lecturer is much better.” [DC1, psyc1]. The other data collector noted that “She [the lecturer] is supposed to have students from M onwards only, but she has many other students today” [DC2, psyc1]. This data collector noted further that “compared to the other lecturer she is very enthusiastic, engaging, cheeky, interested in her students more as people and individuals” [DC2, psyc1] implying that lecturer characteristics might drive students to attend particular lectures. While we have no direct evidence for this occurring, it is also possible for students to match their attendance based on other criteria such as attending lectures with their friends, or at a venue or time that is more convenient. This could mean that some students appeared to attend very few lectures according to our class registers but actually attended most lectures, but in different venues and at different times.

3.3. Impact on teaching and learning processes

3.3.1 Disruptions to the teaching process

The reason for collecting attendance registers as well as the ethical aspects of the research procedures (introductions, voluntariness, withdrawal rights, confidentiality, anonymity, the use of the data, and feedback) needed to be made clear to the students on a regular basis. All these procedures reduced the lecturer's teaching time. How the lecturer responded to the introduction of an attendance register to a class was also therefore important. Our observations found a range of reactions. At one extreme lecturers expressed "anxiety about my [data collector] presence and a record being collected" [DC1, psyc2], were "not too keen it seems to have the lecture interrupted", or "not happy with students' attention being spread thin" [DC2, psyc2]. At the other extreme a lecturer was characterized as being "enthusiastic" [DC2, psyc1] about recorded attendance in her class and in another instance the lecturer was "very helpful today, expressed concern about data collection and the size of her class" [DC1, psyc3].

Spending time signing the class registers may have caused some disruption for a student as it involved looking for their student number on the list, signing next to their student number, and passing the register on to the next person. To minimize the time it took for registers to circulate in the lecture venue several registers were distributed at a time. This might have exacerbated the disruption for some students who may have signed multiple registers, while the data collectors noted instances of multiple signatures we did not systematically record this data.

3.3.2 Influence of lecturers on the data collected

It was noticed from the start of the data collection process that some lecturers welcomed the research project, making small speeches on the importance of lecture attendance research [DC1, psyc3; DC1, psyc1]. In one instance the lecturer didn't want the data collectors to stop coming to class: "When we said it was our last attendance [the lecturer] immediately said that students will bunk tomorrow" [DC2, psyc1].

Lecturers also attempted to directly influence lecture attendance for specific events. For example, one lecturer told the class that "I would like you guys [the students] to come when the guest speaker comes" [DC1, psyc3]. Another lecturer asked the data collectors to "take a register next Tuesday at 9am as she is going to explain that it is a non-compulsory revision lecture" [DC2, psyc1] because she wanted to see how that would affect lecture attendance. The lecturer may have influenced the attendance at this particular lecture by explicitly stating to students that the lecture was non-compulsory. These types of interferences appeared to have a minimal effect on the data gathering process as shown by the follow-up lecture: "[the lecturer] expected a poor turn out … but was surprised by the good turnout of students" [DC1, psyc1]. At the end of each lecture when students were reminded to sign the attendance registers, some lecturers would even add (despite the study being voluntary) that students were

not allowed to leave for their breaks if they had not filled out the register. During one of these “speeches” from the lecturer, the lecturer explicitly stated that “there was a relationship between attendance and good marks” [DC1, psyc2]. It is quite possible that some students might have changed their attendance behaviour to encompass this belief or to give a positive impression.

The data collectors also pondered what would happen if the lecturers were the ones requesting students to complete the attendance registers. They noted that if lecturers administered the attendance registers this would “change the power dynamic” as lecturers would have “greater control of the process and more authority” [DC1, psyc3]. As data collectors they found it “difficult to get the students to be compliant to the process” [DC1, psyc3]. Changing the power dynamic between students and lecturer (as data collector) could possibly result in students feeling “forced” to attend lectures when they are not compulsory.

3.3.3 Relationships between lecturers and data collectors

The most frequent comments in the reflective journal were related to the relationship between the data collectors and the lecturers. The data collectors noticed that they were either treated by the lecturers as students in the class (e.g. “the lecture was cancelled today and nobody told us [the data collectors] or the students” [DC1, psyc3]), as lecturer-assistants sitting amongst the students (e.g. “I shouldn’t sit right in front of the class as then the lecturer will think I am there to help them” [DC1, psyc2]), or observers of the whole process (e.g. “Lecturer talked to me during the break. [She] was very curious about the ‘attendance research’ project” [DC1, psyc3]). The data collectors felt like peer-evaluators, judging the lecturing skills of the lecturer. One data collector felt “a strong sense of my ‘evaluation’ [of the lecturer] or that I think that the lecturer thinks I am evaluating him” [DC1, psyc2]. This perceived role resulted in the data collector feel uncomfortable: “[I] have some anxiety about observation. [This is] linked to previous lecture where the lecturer asked me questions about the quality of her lecture” [DC1, psyc3].

The data collectors also struggled to determine their own identity in the process: “I have become the third person in the room!” [DC2, psyc1] to which the other data collector [DC1] responded: “Yeah … I feel that often!” In one reflection the data collector struggled to determine his role as an observer or as a student: “Sometimes I lose track of observing the class and become absorbed in the actual lecture, at other times I feel bored by the lecture and rather observe the class” [DC1, psyc1]. Where the data collectors chose to sit in the lecture theatre appeared to influence their identity: “Today I’m not sitting in the students’ chairs – sitting in front. [I have] a sense that I am neither a part of students [or] staff” [DC1. Psyc2]. How the data collectors dressed was also a possible influence in how they were perceived in the research process: “the way I dress appears to possibly be a factor in how I am ‘approached’ as a research assistant” [DC1, psyc3] to which the other data collector responded: “How do you notice this? I’m conscious of it – more my own assumption, but it might be true” [DC2]. However,

it was not clear from these statements whether the data collectors were referring to the students or the lecturers.

These roles sometimes appeared to reflect gender role stereotypes about males as academic staff or sources of confirmation. For example the male data collector [DC1, psyc3] noted that the female lecturer “asked me many questions about how she should conduct a lecture" while the female data collector [DC2] responded "interesting that she [the lecturer] doesn't ask me ... Why do these primarily 'women' lecturers ask you [the male data collector] for feedback?" In a different class (also a female lecturer) the same data collector “felt much more comfortable … much more relaxed and at ease” [DC1, psyc1] suggesting that different lecturers had a unique way of relating to the data collectors. This phenomenon is worthy of further investigation in future research.

The data collectors considered how to “gain the lecturer’s trust” [DC1, psyc3]. In retrospect, it was felt that allowing the data collectors and lecturers to spend some time before the start of the data collection to establish a comfortable, open and clear communication network would have been beneficial. Examples of the impact of poor communication were not informing the data collectors that a particular lecture had been cancelled [DC2, psyc1] or that a test was scheduled for a particular day [DC1, psyc3] when registers were to be collected. This impacted negatively on the number of class registers that were collected. There were several times (on average, twice for each class) that the lecturer did not arrive for a class and had only informed the students in the lecture before. This had an impact on the ability of the data collectors to collect registers, but might also have had an effect on students who did not attend class regularly as they would also have been unclear as to whether a lecture was happening on a particular day or not.

3.3.4 Relationships between students and data collectors

At the start of the data collection process the students were enthusiastic participants. One data collector noted that “students were eager to write their names on the register” [DC1, psyc3] and “students are helpful when giving out the register” [DC1, psyc1]. Later in the term the same data collector wondered “how much of a Hawthorne effect is happening here? i.e. does the study on attendance increase attendance?” The data collector was considering the possibility that the presence of the data collector (and their perceived role as monitors of attendance) who collected attendance registers might have had the effect of encouraging the students to attend lectures.

The fact that data collectors were asked to write a reflective journal may also have influenced this relationship. One data collector noted that he was “wondering if any students think I am a student as I am writing a lot” [DC1, psyc2]. Having the data collector as a “member” of the class may have advantages in the data collection process. In one instance a student in the class treated the data collector as a confidant: “A student sitting next to me expresses

that she feels he [the lecturer] doesn't lecture well; that she doesn't understand him and finds the lecture 'not good'. She expressed that she tends to learn more at home. Also expresses that she has noticed less students are attending the lecture" [DC1, psyc2]. In another instance, a student actually treated one of the data collectors as another student although this may have created some identity confusion for the data collector: "[I] had a long conversation with a student from [psyc1]. Discussion was quite personal. The student thought I was a student – interesting use of categories … what category am I?" [DC1, psyc1].

4. Discussion

4.1 Attendance register collection issues

It is not possible to reflect on every emergent issue in the results. Therefore this discussion focuses only on those aspects that we believe had the most significant bearing on the attendance data collection process. The evidence (see Tables 1-3) suggests either that attendance registers under-represent attendance or that self-reported attendance over-represents actual attendance. Since self-reported class attendance is the dominant data collection method for class attendance (see Davidovitch & Soen, 2006: 691-703; Dolnicar, 2005: 103-15; Durden & Ellis, 1995: 343-6; Federici & Schueger, 1976: 172-4; Galichon & Friedman, 1995: 357-60; Grabe et al, 2005: 295-308; Kottasz, 2005: 5-16; Longhurst, 1999: 61-79; Moore, 2003: 367-71; Park & Kerr, 1990: 101-11; Rodgers, 2001: 284-95; Stanca, 2006: 251-66; Van Blerkom, 1992: 487-94) this has implications for the validity of studies that use self-report measures as Martins and Walker (2006) noted that self-reported attendance measures were less reliable. As Dollinger et al (2008: 872-85) have noted self-report measures are open to social desirability effects and memory recall deficits. Unlike Van Walbeek (2004: 861-3), the data collectors did not note any instances where a student signed against multiple names (i.e. over-representation), although this would have been extremely difficult to identify with multiple registers circulating in large lecture venues. Like Van Walbeek (2004: 861-3) entry into the attendance register for this study was for students to write their name, student number, and signature. This strategic choice may have reduced the over-representation issue.

An interesting point to determine from the results is when to consider a student as having actually attended a lecture. This issue arose primarily from students who arrived late for class. In this study the data collectors noted late attendances anywhere from a few minutes late to students arriving at the end of the lecture and still wanting to sign the register. The data collectors also noted instances where students arrived on time but then left the lecture early (and where students arrived late and left early). In all instances students might have been recorded as present when the value they would have gained from attending lectures would have been reduced. In Chung's (2004: 48-58) study students who arrived later than five minutes into the lecture were recorded as absent (despite the fact that they would have gained at least some benefit from lecture attendance if they had

arrived six minutes or even twenty minutes late). The data collectors suggested that a column for “time arrived” might be a useful addition to the attendance register, but this would still not account for students that left early. What is absent from our analysis though is what actually happens in a lecture. If a lecturer usually starts their lecture late, then late attendance has less of an impact. Similarly, when a lecturer invites a guest speaker or is covering revision work students may make judgments about the value of each lecture and their attendance behaviour would change accordingly. The perceived value of each lecture and indeed, each lecturer (Marburger, 2001: 99-110; Romer, 1983: 167-74), to a student was not included in our analysis.

Any direct method of measurement (e.g., questionnaires, attendance registers, interviews, and focus groups) taken during lectures will be intrusive to the normal lecturing process. There are lecturers who feel that it is not their duty to actively monitor student attendance. The task is time consuming and (as has been shown in this article) is perceived to impinge on teaching and learning practices. Additionally, Kerlinger (1986) noted that invasive measurements might influence the quality of data obtained. While these disruptions are unavoidable, they should obviously be minimized. In this study, attempts were made to minimise the impact of measurement effects by reducing the number of registers taken through randomization and through the simplicity of the registers. The fact that registers were not completed by everyone present in a lecture is problematic, but also unavoidable. Students who arrive late for lectures, who fail to receive the register, or who lack the motivation to participate in the research, will be present in all data collection processes. This study followed University ethical guidelines that entry into the study should be voluntary. It is generally accepted in research methodology that the voluntary nature of the sample will affect who participates in the study and therefore the validity of the study findings (Rosenthal & Rosnow, 1991). In particular, the motivation to participate in the study may have had an important influence.

The inconsistencies between the class registers and the official class registrations are problematic not only for the larger study but also for the academic enterprise as it produces administrative problems. In particular, the administrative tasks of capturing student marks (assignments and examinations), printing the correct amount of course material, arranging lecture venues that can accommodate the correct number of students, and the arranging of test and examination venues would be affected.

It is also worthwhile to emphasise the influence of the lecturer in the collection of attendance registers. A number of the lecturers initially appeared resistant to the data collectors collecting attendance registers. Hughes (2005: 41-9) noted a similar response with lecturers expressing resistance to spending time in lectures collecting attendance data. In one instance in our study the data collection eventually had the opposite effect with a lecturer wanting the data collectors to continue coming to class. This effect appears to be similar to Shimoff and

Catania's (2001: 192-5) finding that collecting attendance data actually increased lecture attendance. In certain instances, the lecturers also failed to observe research protocol by effectively coercing students to participate (Devlin, 2006). This type of lecturer behaviour is difficult to prevent without careful communication between the research project team and the lecturers concerned. However, unlike in other research coercion situations, the impact of this coercion might not be negative. Moore (2003: 367-71) for example, found that informing students about the relationship between class attendance and academic performance on the first day of class increased lecture attendance and academic performance.

Finally, it is important to reflect on the ambiguity of the identities, roles, and relationships experienced by the data collectors. The data collectors struggled with discovering their roles and identities within the data collection process, variously describing themselves as peer-evaluators, teaching assistants, research assistants, and students. In their interactions with the lecturers, there was an element of gender stereotyping with the male data collector being perceived more as a teaching assistant when the female data collector was either ignored or treated as a student. Their role identity was further complicated by the reflective journal exercise which emphasized note-taking during data collection. The burden of these different roles impacted heavily on the data collectors. At one point in the reflective journal a data collector even experienced "some resistance to writing" [DC1] citing the conflicting roles as a primary reason. The presence of data collectors (and attendance registers) in lectures would probably have increased attendance (e.g. Shimoff & Catania, 2001: 192-5), but this also allowed the data collectors to interact informally with students and collect student comments that might otherwise have remained uncaptured.

4.2 Suggestions for improving the collection of class attendance registers

Communication and planning (especially between lecturers and data collectors) appeared to be essential in providing accurate and efficient means of collecting data around student attendance. Schedules should be developed before the implementation of attendance registers to classes to coordinate the needs of the teaching and learning endeavours as well as the needs of the research process. The establishment of a good working relationship between the lecturers and the data collectors is seen as paramount. Where there was a poor working relationship the lecturer often would not commit to requests or would be ambivalent about the data collection process, which made it difficult (or delayed data collection) to collect data. However, where there was a positive relationship between lecturers and data collectors, the lecturers facilitated data collection. For example, lecturers had more authority than the data collectors and therefore helped them get the attention of the class. The lecturers' authority also confirmed what the data collectors were saying through supporting statements. However,

the support should arguably not extend to lecturers trying to directly coerce students into completing class registers.

Having two data collectors decreased the apparent monotony of data collection through mutual support, encouragement and creative reflection. This is also believed to have increased the accuracy of the entire data collection process, as the data collectors' peer supervision aided the internal consistency. Helpful characteristics and aspects of the data collectors that appeared to foster good relationships with the lecturers were a thorough knowledge of the research protocols and aims, assertiveness, confidence, approachability, and being able to respond openly and positively to the lecturers concerns and questions about the research. However, having recently been undergraduate students themselves it is likely that their own experiences in lecture room situations may have influenced their reflections.

The attendance register might also be modified to capture additional including the time of arrival and whether or not they were assigned to a particular lecture timetable slot. In the compilation of the class registers, instead of having the students' names on the list with two blank columns for students to complete their student number and signature, an additional column may be added, where a student could indicate which class they think they are registered for. This would provide useful information that would help data collectors determine if students came from the target class or were actually assigned to another class. It might also assist to have a covering page on the registers, giving instructions to students about how the register should be filled in. While this may enhance the accuracy of the data it may however, also slow down the data collection significantly and cause more distraction during lectures.

Electronic means of capturing lecture attendance should be explored since they might provide more accurate and less disruptive methods of data collection. However, student resistance to electronic monitoring would have to be carefully managed as this may violate the voluntary participation nature of this type of research.

4.3 Study limitations

As with most qualitative work it bears mentioning that the results of this study are limited in their generalisability. We looked at specific classes at a particular University and within a specific temporal and social milieu. We only collected attendance registers for mainstream psychology courses, at a single university, for one term. We cannot say with certainty that our data are generalisable to other classes in different departments, at different universities, or for different timeframes. In addition, we used data recorded by two data collectors, each with unique characteristics that might have resulted in idiosynchratic interactions with students, lecturers, and with each other and therefore a distinctive set of

reflections. This study cannot say anything specific about using different data collectors, lecturers, teaching assistants, or other administrative personnel.

This study did not adopt a typical autoethnographic approach that reflected the "story" of a single individual. The "autoethnographic" account in this study is in fact the reflections of two data collectors (not the singular implied by the prefix "auto"). We also employed an analytic autoethnographic approach that does not attempt to reflect the emotions and feelings in a "storytelling" style. Instead we attempt to remain impassive, focusing rather on the theoretical analysis of the reflections. Following Berg (1995), the results are presented as a analysis of content rather than a true ethnographic account.

Bochner (2007: 197-208) warns of memory problems in autoethnographic work. The problems associated with memory recall are partly overcome in this study since the data collectors recorded their observations and reflections in a journal at the same time that they collected the attendance registers. Memory may still have influenced the interpretations drawn. It is possible that the data collectors would have been drawing from their own experiences as undergraduate students sitting in a lecture listening to a lecturer when making their notes. It also is likely that their training in psychotherapeutic techniques could also have interacted with their memories of time spent in lectures. Additionally, during the analysis phase we drew on multiple comments made across different classes at different points in time. This new reading creates a "story" in the mind of the analyst that is potentially different from the data collectors' experiences at the point of writing the comments. According to Bochner (2007: 197-208) one should be aware of these possible contradictions in interpreting the reflections.

5. Conclusion

This article has critically reflected on how data collectors have been used to gather data on lecturer attendance and does not, however, indicate the impact that lecturers (or other assistants) would have on lecture attendance. As other researchers have shown there are aspects of the process of collecting attendance data (e.g. Shimoff & Catania, 2001: 192-5) and informing students about attendance research (e.g. Moore, 2003: 367-71) that impact on lecture attendance and subsequent academic performance. Studies that used direct observation methods (reviewed in the literature review) largely take it for granted that their methods of data collection will have little impact on the results of their studies. However, as has been shown in this study, the methods of data collection impact not only on the validity and quality of data collected, but also on the data collectors themselves.

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