

Does academic work make Australian academics happy?

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Happiness research is a rapidly-growing area in social psychology and has emphasised the link between happiness and workplace productivity and creativity for knowledge workers. Recent articles in this journal have raised concerns about the level of happiness and engagement of Australian academics with their work, however there is little research on the activities Australian academics conduct during a typical day and how these activities affect happiness or productivity. We asked teaching and research academics at a regional Australian university to keep time diaries of their days detailing the tasks they engaged in as well as how they felt overall about their day in terms of both emotional satisfaction and workplace effectiveness. Supporting the notion of intrinsic motivation for academic work, we found a strong relationship between happiness and self-reported effectiveness. We found that research activities made academics happier with their days and that time fragmentation was a major driver of unhappiness. However we also uncovered a tension between the activities which make academics happy and those activities which made academics feel productive.

Are Australian academics happy?

Australian academics appear to be an unhappy lot. In recent surveys of academics such as the NTEU's survey at University of Western Sydney (Lazarsfeld Jensen & Morgan, 2009), academics have expressed high levels of intention to leave the sector in the near future (Bexley, James & Arkoudis, 2011), and academics have expressed low levels of satisfaction with current university leadership (Coates, Dobson, Goedegebuure & Meek, 2010).

A recent AUR article (Martin, 2011) has placed the academic workplace within our new understanding of the link between work and happiness. In a related article Freudenberg and Samarkovski (2014) introduced a concept of 'enthusiasm' as an academic's engagement with activities involved in academic work and cast doubt on whether many of the recent changes in the Australian

university sector have been conducive to feelings of enthusiasm in academics.

While we may have solid data about the unhappiness of Australian academics, we do not possess the empirical studies necessary to reveal the reasons for this unhappiness. While Australian universities might be becoming increasingly managerial, governance-driven and more bureaucratic, what particular aspects of the recent changes in universities are causing higher levels of unhappiness in Australian academics? Is it the managerial direction in which universities appear to be headed, or is it something else entirely?

What is important for happiness in the academic workplace?

Studies in happiness research – summarised in Martin (2011) – have stressed the importance of attitudes and

activities to personal happiness rather than monetary rewards. A large increase in income or wealth can generate a temporary increase in happiness. However, over longer periods of time, happiness generated in this way falls back to a natural state or set point for each person. The only means of permanently changing personal happiness is to change a person's attitudes or daily activities.

If daily activities determine happiness, what do Australian academics do on a day-to-day basis and how do these activities affect their happiness? Csikszentmihalyi (1990; 1996) developed the concept of flow – the feeling of transcendence which accompanies intense concentration on a task – and found the concept to be applicable across a wide range of activities. It is these experiences of flow which could lead to happiness in the workplace. As an academic, Martin (2011) explained that the greatest opportunities to enter a flow experience would occur during research activities, while doubting that flow experiences would be found within teaching or administrative tasks. Thus Martin's opinion was that research activities would increase the happiness of academics through flow, while teaching-related or service activities would not. However there are other positive values in academic work such as collegiality, social networking and assisting others from which academics may draw happiness, so the relationship between happiness and academic work may be a complex one.

Pink (2009) likewise related the happiness of professionals, not to monetary rewards, but to feelings of autonomy, mastery and purpose. For Pink a relatively autonomous academic may not set the goals for their work, for example quality research and quality teaching, but the academic would be able to determine in a large part how those goals are achieved. Mastery is the opportunity to apply an academic's specific skills to particular problems, which would create experiences of flow for the academic. Finally, purpose is the alignment of the academic's personal goals with the goals of the institution at which the academic works.

Beyond experiences of flow, autonomy, mastery and purpose, for Amabile (1983; 1998), intrinsic motivation is a major driver for knowledge workers' happiness and productivity. Intrinsic motivation enables academics to derive pleasure from the task or work itself, much as flow

does, and so the successful execution of the task becomes the personal goal. This concept of intrinsic motivation is similar to Maslow's (1970) view of self-actualisation. We might expect then that academics are happiest when they feel most productive.

Yet Robinson (1999) argues that modern education systems, at secondary and tertiary levels, are actively stifling productivity through bureaucracy and through constant evaluation and audits. These organisational structures stifle the autonomy, spontaneity and flexibility necessary to be creative (Mumford, Scott & Strange, 2002) and thus they work in a spirit contrary to the intrinsic motivation of these workers.

Happiness, creativity and work fragmentation

To experience flow and to achieve feelings of mastery, academics would need focused periods of time to concentrate on individual tasks whether in research or teaching. The descriptions of the academic workplace in Currie (1996), Anderson, Johnson and Saha (2002) and Lazarsfeld Jensen and Morgan (2009) suggest that the opportunities for flow through long periods of uninterrupted time spent on a single task would be minimal during a typical academic's day in a modern university due to emails, phone calls and other interruptions.

Creative workers need time to drift, reflect, ponder and dream. They need time for their ideas to take shape and materialise (Mintzberg, 1998). Whilst in a creative state whether writing a paper, devising an experiment or preparing their teaching materials, academics need time away from distraction and interruptions to reach that flow state. Yet do modern universities allow much opportunity for this sort of free time? Amabile's (1998) article in Harvard Business Review entitled 'How to Kill Creativity' points out that modern organisations do not set out to kill creativity but do so unintentionally as a by-product of maximising business imperatives through 'coordination, productivity, and control' (Amabile, 1998, p. 77). These measures can destroy the autonomy and free time necessary for creative work.

There is increasing empirical evidence from studies of knowledge workers that fragmented work patterns hurt

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workers' performance. In the context of high-tech firms, O'Connell and Frohlich (1995) found that, 41 per cent of the time, employees do not resume their original task after an interruption. Interruptions harm productivity of ongoing tasks due to cognitive issues associated with context switching, recollection time and an increased potential for errors, and, for highly intellectual tasks, the costs of interruptions are higher (Sykes, 2011; McFarlane & Latorella 2002). Czerwinski, Horvitz and Wilhite (2004) found that disrupted activities took over twice as long to complete as uninterrupted ones and that interrupted tasks comprised 4.5 hours out of a 40 hour work week, or 11.2 per cent of the work week, while Marulanda-Carter and Jackson (2012, p.89) reported that 'five minute email interruptions cause a task to take one-third longer than completing a task without email interruptions'. The productivity cost of an interruption comes in the form of the extra time required to return to the same point in the interrupted task.

The concepts of monochronic and polychronic time - being actively involved in two or more activities simultaneously (Bluedorn, Kaufman & Lane, 1992) - developed within the organisational behaviour literature have likewise identified a productivity cost for interruptions. Frei, Racioc and Travagline (1998) found out that monochronic behaviour (doing one thing at a time) of faculty members at a private college in the US was positively and significantly correlated with an academic's research output, measured by the number of publications and number of research projects in progress for the academic.

We might expect then that there are two adverse effects of time fragmentation on the personal happiness of academics. A direct effect would be through prevention of flow as an academic under constant interruption jumps from one task to another during the day. There may also be a secondary effect through the consequent reduced productivity coupled with intrinsic motivation in their work, leading to lower levels of happiness for the academic.

What do academics do at regional universities?

In order to investigate how the typical daily activities of Australian academics affect happiness or productivity, a survey was undertaken in which teaching and research academics were asked to produce time diaries of their activities for the whole of one session out of a year. This survey took place at a large regional university with an emphasis on distance education. The academics

Table 1: Summary of daily activities for six teaching-research academics at a regional university over a typical session

Activity	Average working hours per day (hr)		% of Average Week-day (%)	% of Average Week-end (%)
	Week-day	Week-end		
Communicating with students	1.8	0.7	19.0	13.2
Subject administration	2.1	1.6	22.1	30.2
Subject preparation	0.8	0.4	8.4	7.6
Subject delivery	0.4	0.1	4.2	1.9
Research	2.8	2.0	29.5	37.7
Service and general administration	1.6	0.5	16.8	9.4
Total hours	9.5	5.3	100.0	100.0
Number of recorded days	562	110	562	110

provided an hour-by-hour breakdown of their activities and self-reported their emotional well-being and work effectiveness. Each academic provided on average 100 days' worth of time diaries.

The time diaries were collected from six teaching and research academics at lecturer and senior lecturer levels. The workload models at this university assume these academics devote 60 per cent of their time to teaching, 30 per cent of their time to research and the remaining 10 per cent to administration and service. Two other academics were included in the original sample however these academics were performing in an administrative role as course managers in addition to their academic roles. The time diaries for these two administrator-academics were sufficiently different from the other six traditional research-teaching academics that it was decided to exclude them from the research.

The time diary sheet to be filled out was a 24 hour time diary and included the following main categories of daily activities (see Appendix 1 for a complete listing):

- Communicating with students including face-to-face meetings, email, telephone, subject forums or another form.
- Subject administration including grading of assignments and exams, processing student forms, completing subject reviews or other subject-related compliance.

- Subject preparation including developing lectures, tutorials or online materials.
- Subject delivery for lectures, tutorials or online presentations related to a subject.
- Research including reading, writing, preparing grant applications, supervising doctoral students, meetings related to research, reviewing or other research-related administration.
- Service and general administration including meetings, course- or discipline-related research, general administration or emails.

These activities and sub-categories were set out on the time sheets, and academics were asked to indicate for each hour the activity or activities which largely occupied that hour. Where multiple activities were reported in an hour, the academic's time was assumed to have been split equally between the reported activities. These sub-categories of activities – for example, 'grant writing' or 'lecture delivery' – were then summed up to arrive at the total hours spent on more general categories of activities – for example, 'research' or 'subject delivery'. A summary of the time diary data is contained in Table 1 showing the allocation for the general categories of activities.

As this university has a high proportion of distance education subjects, these academics are probably unusual compared with many other Australian academics. Hours devoted to subject administration and communications with students would most likely be higher and subject delivery hours lower for these academics than for academics at institutions with more traditional lectures and tutorials to internal classes.

Working days typically included on average one weekend day each week (110 weekend days out of the total of 670 reported days). An average work-week is imputed then to be five weekdays at 9.5 hours plus weekend day at 5.3 hours or a 52.8 hour work week. This estimated work week comes within the range of the 51 hours per week for senior lecturers from Coates *et al.* (2009). A high proportion of these hours were undertaken outside the traditional 9am-5pm working day. For these academics, the break-down of their activities roughly reflected the 60-30-10 distribution of hours between teaching, research and administration in their workloads, although it seems unclear where administration might factor into the calculations in its various forms. Weekend days were concentrated around subject administration (usually marking) and research, with a smaller proportion of the working day devoted to other types of activities.

At the end of each day the academics assessed the overall day by answering two questions 'How was your

Table 2: Self-reported happiness and effectiveness of academics

	Weekday	Weekend
Average happiness	1.34	1.51
Average effectiveness	1.40	1.47
Number of recorded days	504	105

Note: An academic's happiness and effectiveness for each day are reported on a scale of 0 ('Poor'), 1 ('OK') and 2 ('Good').

day emotionally?' and 'How effective were you today?' The possible responses were 'Good', 'OK' and 'Poor', which were coded as '2', '1' and '0'. In our measure of happiness, we look at the activities which lead to the academics reporting a 'Good' day. The average levels of reported happiness and effectiveness are set out in Table 2. We use the academic's emotional satisfaction for the day as an indicator of 'happiness' for that day. In particular we are interested in the factors which lead to the academic indicating that this was a 'Good' day emotionally. Admittedly our happiness measure relates to retrospective happiness as opposed to an immediate report of happiness as measured in the experience sampling method of Larson and Csikszentmihalyi (1983). Our intention was to allow academics to provide an overall assessment of their day rather than an assessment of a momentary emotional state. We also gave academics an opportunity to provide a qualitative reflection on their day within their time diary. We were concerned that this time for reflection would not have been possible within the working day using an experience sampling method.

It is interesting to note the higher levels of happiness (and effectiveness) for academics while working on the weekends. We will explore this finding, and provide some possible explanations, later in the paper.

The literature has emphasised the deleterious nature of time fragmentation on workplace productivity. The question arises about how we go from hourly time diary data to an explicit measure of the fragmentation of an academic's work day when there is no commonly accepted measure of time fragmentation in the literature. As a measure of time fragmentation we use the concept of 'fractionalisation' developed in economic theory (Mauro 1995; Collier & Hoeffler 2004). This measure was developed to provide an indicator of the degree of cultural division within a country.

Fractionalisation is a number between 0 (low) and 1 (high), which is intended to measure how disjointed a day is in terms of the tasks carried out during the day. If we consider the fractions of the day devoted to the broad category of tasks, then a fractionalisation level of

Table 3: Results of a logit analysis of an academic reporting a 'Good' day emotionally and for effectiveness.

<i>Dependent variable:</i>	<i>Stating a 'Good' day emotionally as an academic</i>	<i>Stating a 'Good' day for effectiveness as an academic</i>
	<i>Odds Ratio</i>	<i>Odds Ratio</i>
Proportion of day spent on activities:		
Communication with students	2.13	3.89
Subject administration	3.20	1.09
Subject delivery	0.41	31.75**
Research	6.85*	0.80
Service and general administration	3.50	0.92
Indicated a 'Good' day for effectiveness	82.9**	
Indicated a 'Good' day emotionally		81.49**
Fragmentation of the day	0.13*	2.04
Pseudo-R2	0.53	0.51

*Statistically significant at levels **p<.01, *p<.05; Number of observations: 609*

Note: Observations on subject preparation were dropped as that activity had no statistically significant relationship with reported happiness for the academic's day and to avoid having a combination of independent variables (the proportion variables) sum to one.

0 indicates a day devoted entirely to one type of activity, such as a 'research day' devoted entirely to research activities. A day devoted 90 per cent to one task and 10 per cent to a second is calculated to be less fractionalised than a day devoted 50 per cent to one activity and 50 per cent to the second. Our measure of time fragmentation is this calculated fractionalisation for the day. This indicator will take on the value 0 if one activity engages the entire day and a number close to 1 if the day includes a large number of separate activities none of which individually occupy a large portion of the day.

If academics are intrinsically motivated and work fragmentation reduces effectiveness, then we might expect that an academic's happiness value for a day is negatively related to the fractionalisation value for that day. There is some evidence for this, as the average level of fractionalisation differs between weekdays (0.37) and weekends (0.14), and only 10 per cent of weekdays were days devoted to a single activity, while almost 60 per cent of weekends were devoted to a single activity.

Possible contributing factors for the higher levels of happiness reported on the weekends may be the lower fractionalisation of tasks for those days and the ability to concentrate on a single activity for a high proportion of the days.

Work happiness and effectiveness for academics

If academics are seeking flow in their activities in the workplace, and flow is more likely to be achievable in research activities than in teaching or administration, we should expect then that academics would be happier on days when they undertook research activities than on days when they undertook teaching and administrative activities. Likewise if academics prefer days which are not fragmented in terms of the types of activities undertaken, we would expect lower levels of happiness to be associated with higher levels of fractionalisation for the day. Following Amabile (1983; 1998), accepting that academics are intrinsically-motivated workers, we would expect to see a strong relationship between an academic's happiness rating for a day and the academic's effectiveness rating for that day.

In Table 3 we present the results of logistic regressions relating the probability of an academic reporting a 'Good' day in terms of emotional satisfaction and in terms of effectiveness to the types of activities engaged in during the day, the fractionalisation of the day and on whether the academic also indicated a 'Good' day in terms of the other rating of that day. In this table the odds ratios for the different explanatory variables are presented, as well as the statistical significance. A maximum-likelihood logit regression (Pampel 2000) was conducted using the STATA 11 software package (StataCorp 2009) to ascertain the factors which made the participating academics more likely to indicate a 'Good' emotional or effectiveness rating for that day.

The odds ratios might need some explaining, but the concept is relatively straightforward. The odds ratio indicates whether a higher value or a lower value for one of the explanatory variables for that day would be associated with a higher probability of the academic indicating a 'Good' day for that day. If the odds ratio is larger than one, then this indicates that higher levels for the explanatory variable are associated with a higher probability of indicating a 'Good' day. If the odds ratio is less than one, then this indicates that higher values for the explanatory variable are associated with a lower probability of indicating a 'Good' day.

The first column of Table 3 presents the results of a logistic regression of indicating a 'Good' day in terms of emotional satisfaction. There are positive and statistically significant relationships between the probability of an academic indicating a 'Good' day and the proportion of the day spent on research-related activities and also on the academic's effectiveness rating for the day. None of the other activities had a statistically significant relationship with the emotional rating for the day given by the academic, although the proportion of the day devoted to communicating to students, subject administration and to service and general administration had a positive but statistically insignificant impact on the probability of declaring a 'Good' rating for the day. There was a negative and statistically significant relationship between the fractionalisation of the day (representing the work fragmentation for that day) and the probability of the academic reporting a 'Good' day.

It should be kept in mind that we have measured the proportion of the day spent on particular activities, such as research, service or subject administration, and that these proportions have to sum to one for each day. A larger proportion of the day spent on one task will necessarily mean that the proportion spent on other tasks must decline. Our measure of time fragmentation looks only at the proportion of the day involved in each activity. As such this measure might miss the sequencing of the day and the precise timing of interruptions such as a phone call. A different measure of time fragmentation may be a valuable topic for future research in this area.

The second column of Table 3 presents the results of a logistic regression of indicating a 'Good' day in terms of effectiveness. A positive and statistically significant relationship was found between the proportion of the day spent on subject delivery and the academic's emotional satisfaction rating for that day. Research activities were found to be positively related to happiness but not to self-reported effectiveness. As was found in the happiness regression, the academics' reported levels of happiness and effectiveness for the day were highly correlated.

Conclusion

We asked teaching and research academics at a regional Australian university to fill out time diaries of the activities of their work days and to record their assessment of each day in terms of their emotional satisfaction and effectiveness during the day. A logit regression found a strong, positive relationship between the proportion of their days spent on research and the happiness of these

academics and a strong, negative relationship between the fragmentation of an academic's day and their happiness.

Intrinsic motivation of the academics in our data was apparent in that participants were happiest on the weekends when they had more unregulated, less fragmented time and could devote large amounts of time to research tasks. This willingness to work on weekends suggests work overload and also a loyalty to their professional ethos. In fact when our participants had longer hours on the task they may have been more efficient due to lack of other competing demands and at the same time more creative due to greater focus.

What policies at the university level or behaviours at the individual level could boost the happiness of Australian academics as a workforce? The findings here suggest that, for a teaching and research academic, the ideal day is a long day spent entirely on research activities without the interruptions of administrative or teaching tasks. Academics can individually act to create these types of days for themselves, or can carve out smaller portions of a week to be devoted regularly to research, and the literature from the work fragmentation in technology workers suggests that there are large personal gains to be made from this. However these attempts by individual academics to reduce work fragmentation are at the mercy of demands from the university, administrative staff and the calendaring of teaching activities and administrative functions.

A more comprehensive attempt would be to design university systems to facilitate the creation of research-only periods for academics. Altering employee time-use and facilitating the introduction of uninterrupted 'quiet time' has been noted in the sociology of work time literature (Perlow, 1999) as very effective in making employees more effective. One possible implementation would be for the class scheduling systems to block out teaching-free periods such as for particular afternoons within a week or even entire days. Another solution might be that administrators are requested not to send administrative requests to academics on certain days of the week. A trade-off might be to expect academics to respond promptly to administrative requests outside those excluded times.

The contrast found between the impact of research and subject delivery activities on happiness and effectiveness for these academics might seem puzzling. Ideally intrinsically-motivated academics should have an alignment between workplace effectiveness and happiness. However while doing research activities made

these academics happier, research activities did not make the academics feel effective for those same days. Likewise while doing subject delivery made academics feel they were effective, subject delivery activities did not make the academics feel happy about their days. This finding suggests a tension between the aims of the university and the aims of these academics - a violation of the sense of purpose which Pink (2009) stressed as important for professionals. The completion of a teaching task provides a feeling of effectiveness (and thus achievement) for the intrinsically-motivated academic, however the same academic is aware that long-term job tenure and promotion relies on research outcomes rather than teaching ones, so this achievement does not lead to happiness.

This finding may also be due to the underlying problem of establishing a sense of achievement within a long-term task of research as opposed to a short-term task of delivering a lecture. There is often a long delay between the performance of a research task, such as the completion of a literature review, and the successful external signal of that task, such as receiving an acceptance from a journal or winning a research grant. In contrast the sense of achievement when completing a teaching task is immediate. A challenge lies then in creating a sense of immediate achievement within research activities, which may themselves generate external signals of achievement only a few times a year. A first step may be for academics themselves to celebrate micro-successes such as finishing a literature review or submitting a paper to a conference or a journal.

A limitation of this paper is that the time diary data was gathered for a limited number of academics at a single Australian institution and thus there is a concern over the generalisability of the results. The authors intend to conduct a wider survey in the future and teaching-research academics are requested to contact the authors if interested in participating in or assisting with a future trial.

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Appendix 1: Categories of academic activities recorded in the time diaries

Communicating with students
• By email
• By phone/Skype
• By forums/announcements
• By face-to-face
Subject administration
• Marking assignments
• Marking exams
• Entering grade-sheet
• Setting up subject websites
• Setting up subject outlines
• Moderation
• Subject coordination
Subject preparation
• Developing lectures
• Developing tutorials
• Developing exams
• Developing online content
• Developing materials
Subject delivery
• Delivering lectures/seminars
• Delivering tutorials/labs
Research
• Research administration
• Reviewing/refereeing
• Reading literature
• Writing
• Grant preparation
• Meetings for research
• Thinking/planning/general research
• Supervision of PhD/DBA students
Service
• Committee attendance
• Course/discipline administration
• Community/professional engagement
• Professional development/training
• General admin/internet/email
Travel for _____
Conversations with colleagues
Other (include category)