Effects on academic learning of manipulating emotional states and motivational dynamics

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Effects on Academic Learning of Manipulating Emotional States and Motivational Dynamics

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Abstract

The aim of this study was to investigate the effects of emotionally disturbing stimuli on the learning process. A five-minute film segment depicting horrific scenes of automobile accident victims, and part of a pathologist's post-mortem of a victim, was shown to an experimental group of 69 student teachers, while a non-treatment group of 66 student teachers served as controls. The two groups were well matched on several independent variables covering the four domains of ability, personality, motivation, and mood states. The emotionally disturbing treatment produced a decrement in learning performance, but resulted in a massive 36 percent increase in predictive variance attributable to enhanced correlations between the non-ability intrapersonal variables and learning performance, for a prose learning task.
Introduction

Early attempts to predict academic learning from intrapersonal characteristics other than intelligence were reviewed by Cattell and Butcher (1968). Numerous papers have been written on this topic (e.g., Clopton and Neuringer, 1973; Kahler, 1973; Lee, 1973; Watson, 1973; Mandryk and Schuerger, 1974; King, 1975; Watterson et al., 1976). Academic learning is best predicted by a combination of ability, personality, and motivation modality measures (e.g., Cattell et al., 1972; Dielman et al., 1971). From the research of Barton, Butcher, Dielman, Piers and Sweney, among others, it has been suggested (Cattell and Child, 1975, p. 202) that up to one-third of the predictable variance in achievement comes from each of the above modalities. According to Gillis and Lee (1978, p. 241), "...for some areas such as reading and mathematics, the ability, motivation, and temperament-modalities each can separately account for as much as 20-25 percent of the achievement variation, to give a total of 60-75 percent accounted-for-variation."

Far less is known about the effects of motivational factors (including general emotional states and specific dynamic traits) on learning than is the case with personality (temperament) and abilities (Cattell and Kline, 1977; Kline, 1979). Studies using the School Motivation Analysis Test-SMAT (Sweney et al., 1970) as a predictor of learning in social science, science, mathematics, and reading were summarised by Cattell and Child (1975). Other subjects such as languages (English), art, music, and physical education were also shown to be predicted significantly by SMAT factors. Overall, the SMAT dynamic factors accounted for almost 25 percent of the variance in school grades (late primary and
early secondary levels), independent of that accounted for by ability and personality traits alone (cf. Dielman et al., 1973).

However, Kline (1979, pp. 221-222) cautioned that this estimate of 25 percent is: “… obtained after correcting the observed correlations for the unreliability of tests and criteria. These correcting formulae make assumptions about the nature of the test variance that are not always met in the practical research setting, and the psychological meaningfulness of corrected figures is always open to wide interpretation.” Nevertheless, Kline acknowledged that motivational factors significantly predict achievement variance, but argued that the Correlations are slight, except for the SMAT superego and self-sentiment factors (which he labelled ‘master sentiments’).

Studies of personality and motivation in relation to academic learning have generally not manipulated the intensity levels of variables, which leaves doubt as to the actual relationships pertaining under conditions of emotional arousal. It is not clear that these low correlations would remain low in such circumstances.

That motivational states greatly influence learning cannot be disputed. For example, Koester and Farley (1982) reported that children who were high in physiological arousal exhibited learning deficits in relation to heightened levels of external stimulation. In the area of depressive mood and academic learning, the literature also indicates a negative relationship (e.g., Brumback and Weinberg, 1977; Kovacs and Beck, 1977; Rapoport, 1977). Some studies have suggested that depressed subjects exhibit deficits in response initiation and problem solving (e.g., Miller and Seligman, 1975; Klein et al., 1976). Tesiny et al. (1980) reported highly significant negative correlations ($p < .001$) between depressive mood and standard achievement scores in mathematics and reading (-0.27, and -0.23, respectively).
Hettena and Ballif (1981) reported that depressive mood resulted in less recall of propositions. For depressed students, learning was inefficient both in terms of acquisition and recall. Discrimination and evaluation were also influenced adversely by elevations in depressive mood state. Likewise, calculations in state anxiety have been reported to impair problem-solving and learning (cf. Sarason and Spielberger, 1980). According to Gross and Mastenbrook (1980), aroused anxiety impedes information in either the use of logical rules and/or memory. Also Benjamin et al. (1981) reported that test anxiety interferes with encoding and organising of information as well as with retrieval in the test situation, thereby providing support for both the encoding deficit and retrieval deficit hypotheses. Culler and Holahan (1980); as well as Britton et al. (1982), also reported an inverse relationship between state anxiety and learning performance.

Unfortunately the above studies have been limited to the investigation of the effects on learning of unitary mood states, rather than attempting to examine more comprehensively the effects of several mood states simultaneously. Accordingly, the purpose of the present study is to investigate the effects on learning of manipulating various emotional states and specific motivational factors (dynamic traits in Cattell's terminology). Such variables ought to demonstrate significantly different correlations with learning under arousal versus non-arousal emotional conditions. From the above studies, it is evident that emotionally arousing stimuli which trigger anxiety or depressive mood, interfere with academic learning at both the acquisition and recall phases of the process (although recall under such moods may be facilitated according to the mood-state-dependent learning phenomena (see Bower, 1981; Bower et al., 1981; Laird et al., 1982). On the other hand, positive mood states such as curiosity have been
shown generally to enhance academic learning (e.g., of prose materials--Boyle, 1979, 1983). Therefore it is hypothesised that presentation of an emotionally disturbing stimulus should interfere with learning, as evidenced by diminished scores on a comprehension test of immediate factual retention. Although not a typical index of educational achievement, such a measure nevertheless should provide evidence of learning, at least in the short term. It is further postulated that emotional states and specific motivational dynamics altered significantly by an emotionally disturbing stimulus will demonstrate significant correlations with post-test retention scores in the experimental group exposed to the aversive stimulus, but not in a non-treatment group.

Method

Subjects

The 135 subjects (21 males, 114 females) were all student teachers attending ICE, Melbourne. The experimental group comprised 69 students (14 males, 55 females) whose mean age was 22.94 years (SD = 6.45 years). The non-treatment group consisted of 66 students (7 males, 59 females) whose mean age was 24.52 years (SD = 7.04 years). The two groups were well matched, as on a total 54 independent variables (comprising age, IQ, personality traits, general emotional states, and specific motivational dynamics) only three variables differed significantly between groups. These differences did not exceed those expected by chance alone (they were partialled out using ANCOVA techniques in analyses of the data below). The majority (some 80 percent) of the students came from predominantly middle-class socioeconomic backgrounds, and were Australian born.
Instruments

The test-battery comprised: (i) ACER-AL, a group test of general intellectual ability with a linguistic bias (ACER, 1983); (ii) Sixteen Personality Factor Questionnaire-16PF (Cattell et al., 1970); (iii) Eight State Questionnaire-8SQ (Curran and Cattell, 1976); (iv) Motivation Analysis Test-MAT (Cattell et al., 1964).

The ACER-AL was designed for use with senior secondary and tertiary level students. It comprises 28 verbal reasoning items, involving analogies, opposites, letter series, and proverbs. Testing time is exactly 25 minutes. The test was designed to discriminate well between IQs of 100 and 130. Hence it was appropriate for the sample under study. The 16PF is a factor analytically derived questionnaire which gives a broad coverage of adult personality traits. According to the test manual for the 16PF. (IPAT, 1972), each item relates to only one factor, thereby facilitating the independence of each factor (subscale). Since the subscale intercorrelations are small, it was argued that each subscale provides new information. The 8SQ measures eight important general emotional states (Anxiety, Stress, Depression, Regression, Fatigue, Guilt, Extraversion, and Arousal). Prediction of an individual's behaviour relies greatly on his/her present state (Thorne, 1974, 1980; Zuckerman, 1979). Form A of the 8SQ was used since it was more reliable and less susceptible to state fluctuations in terms of its test-retest data, than was Form B (Curran and Cattell, 1976).

Given the higher dependability and stability coefficients for Form A, any alterations in subscale scores could be regarded with greater certainty as demonstrating actual psychological changes. As for the MAT, Form A was used. According to Cattell et al. (1964), the MAT has the advantage of being an
objective measure (albeit of the pencil and paper variety), which represents an advance over the transparency of self-report, questionnaire methods. As per Buros (1978) these respective multivariate measures are as reliable as most alternative measures in the personality, and motivation/state domains. Total testing time was about two hours, with the 16PF, 8SQ, and MAT taking around 45, 20, and 55 minutes respectively, in addition to the 25 minutes for the ACER-AL.

**Design and procedure**

The study utilised a post-test only control group design (cf. Campbell and Stanley, 1963; Cook and Campbell, 1979). The students took the ACER-AL and 16PF (Form A). Four weeks later they were given the MAT. After another three weeks, the students took the 8SQ immediately preceding the experimental treatment and the learning tasks (cf. Zuckerman, 1979). The 8SQ was given at this point, rather than after the tasks, in order to assess the effects of mood at the time of learning acquisition, rather than at the time of recall, since this question seemed the more fundamental. The emotionally arousing treatment was a five-minute film segment depicting horrific scenes of automobile accident victims. For the non-treatment group, a five-minute rest took the place of the treatment. Both groups then read a prose passage on curiosity theory, and listened to a 10 minute tape-recorded extract on the behavioural management of hyperactive behaviour (Boyle, 1979a).

The learning materials were selected on the basis of three criteria: (i) reading level—both extracts gave a SMOG grading (McLaughlin, 1969) for complete comprehension of 16. Hence the reading/listening levels were appropriate to the sample under study. (ii) reading/listening time—since only 8-10
minutes was involved in reading the prose passage (10 minutes for the tape-
recorded extract), the interval between the film presentation and subsequent post-
tests was brief. Both tasks were of sufficient length (the prose passage was about
1860 words, and the tape-recorded extract was about 1600 words) to represent
realistic learning at the tertiary level (cf. Zaritsky, 1976). (iii) topic familiarity (the
topics were chosen on the basis that student motivation to learn is maximised
when the topic is neither too familiar nor too unfamiliar (Bull and Dizney, 1973;
Berlyne, 1978; Boyle, 1979b). Presentation of the two learning tasks was
counterbalanced to avoid ‘position effects’. Likewise, each posttest (which
comprised 15 multiple-choice objective questions, with four alternative answers,
and four response categories) was counter-balanced for the same reason.

Results and Discussion

Given Cattell's (1978) argument that intra-scale item-homogeneity should
not be excessively high (Kline, 1979, argued for an upper limit of 0.7), it was
surprising to find 8SQ item-homogeneities in the 0.9 range (lower bound KR21
estimates ranged from 0.43 to 0.91, with most being around 0.7 or 0.8). In accord
with state-trait expectations, stability coefficients for the 8SQ subscales ranged
from 0.48 to- 0.65 which suggested that this new measure of emotional states was
situationally sensitive.

Among the background variables, the two groups differed significantly on
16PF Factor Q1 (Radicalism), MAT Factor I-Ca (integrated Career Orientation),
and MAT Factor I-Ss (integrated Self-Sentiment). These differences were
controlled statistically. The first hypothesis that presentation of the emotionally
disturbing film treatment would interfere with learning, as evidenced by
diminished post-test scores in the experimental group, was tested using a between
groups ANCOVA (with covariates Ql, I-Ca, and I-Ss, and between subjects factors
being treatment and sex). There was a highly significant treatment effect (F1,128 =
5.39, p < 0.02) with the experimental group obtaining a mean total posttest score
(curiosity and hyperactivity post-tests combined) of 13.82 (SD = 3.96), and the
non-treatment group obtaining a mean of 15.45 (SD = 3.92). Of the covariates,
only Ql significantly influenced the mean total post-test score (F1,128 = 5.71, p <
0.02).

In order to explicate more fully these findings, separate between groups
ANCOVAs were performed for each post-test. In both instances, only the Ql
covariate significantly influenced the scores (F1,128 = 4.63, p < 0.03; and F1,128 =
3.89, p < 0.05; for the curiosity and hyperactivity posttests respectively).
However; only for the curiosity post-test was the treatment effect significant (F1,128
= 9.71, p < 0002). Therefore the first hypothesis was supported only in regard to
the curiosity learning task, with the experimental group obtaining a mean post-test
score of 6.84 (SD = 2.23), as compared with the non-treatment group which
obtained a mean of 8.06 (SD = 2.08). As the students were more familiar with the
content of the hyperactivity learning task (ascertained during a debriefing session),
it is probable that the lack of a significant treatment effect in relation to that task
was a direct function of content, rather than mode of presentation or duration of
task. Certainly, these alternative explanations could be fruitfully explored in
subsequent studies in area. Interestingly, there was a significant main effect for sex
involving the hyper- activity post-test scores. Females obtained a higher mean
score of 7.42 (SE = 0.22), as compared with a lower mean score for the males of
5.96 (SE = 0.49). Since the vast majority of subjects were females, this finding
supports the likelihood of the above explanation concerning the greater familiarity of the students with the hyperactivity learning task, thereby accounting for its lack of 'sensitivity to the emotionally disturbing treatment.

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Tables 1 & 2

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The criterion validity of the learning tasks was assessed by correlating the Australian Higher School Certificate-HSC (Year 12) English Expression score (obtained as a standardised score based on external examination) with the post-test scores. These correlations were all significant (being 0.21, p < 0.01; 0.18, p < 0.03; and 0.18, p < 0.03, for the total, curiosity, and hyperactivity posttests respectively). Since the HSC English Expression score was a highly valid indicator of academic achievement, there was at least some evidence, therefore, that the learning tasks represented valid indicators of real-life learning in the classroom. Clearly though, this evidence was tentative, rather than an absolute certainty.

One possibility was that presentation of the emotionally disturbing stimulus would result in significantly poorer post-test performance for the learning task presented first, owing to disruption of the retrieval process (cf. Hilgard et al., 1979). ANOVAs on the position effects failed to reveal any significant differences. Therefore any effect on performance due to the film treatment persisted throughout the duration of the experimental session, but appeared to have its deleterious influence primarily on the acquisition phase, rather than on the
recall phase of the learning and memory process. This finding supports the encoding deficit hypothesis alluded to by Benjamin et al. (1981), for example. The second hypothesis, that the independent variables altered significantly by the emotionally disturbing treatment would demonstrate significant correlations with post-test scores in the experimental group only, was examined by inspection of the data in Table 3. As is evident, for the experimental group, there were 29 significant correlations between the independent variables and post-test scores, while there were only 12 significant correlations for the non-treatment group. These differences were tested for significance using the sign test (see Daniel, 1978, pp. 130-134). Results indicated that the second hypothesis was supported only for the curiosity task \((p < 0.025, \text{1-tailed})\), whereas for the hyperactivity task, the between group differences (in significant correlations) were not significant \((p > 0.005, \text{1-tailed})\). This finding accords with that for the first hypothesis, in that the emotionally disturbing treatment interfered with the acquisition of the curiosity prose passage, which apparently was less familiar to the students, and presumably, therefore, represented a more difficult learning stimulus than did the hyperactivity passage.

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Table 3

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Most notable from Table 3 is the fact that seven of the eight states measured in the 8SQ correlated significantly with the curiosity post-test scores in the experimental group, while none of these states exhibited significant correlations with the curiosity post-test in the non-treatment group. This finding demonstrates unequivocally the potent effect of general emotional states upon the
acquisition of information at the time of learning. In accord with the literature cited above, anxiety and depression states correlated negatively with learning. In addition, this study demonstrates that the states of stress, regression, fatigue, and guilt also correlated negatively with performance. In contrast to Koester and Farley (1982) however, increased arousal (as measured in the 8SQ) did not result in performance decrements, but instead was positively related to learning. The measures used by Koester and Farley included performance indices such as GSR and mean pulse rate. Seemingly such objective devices would be more reliable than self-report statements concerning arousal levels. Therefore it is probable that the arousal subscale of the 8SQ is invalid.

As for the 16PF, which allegedly measures stable, enduring personality traits, no fewer than eight of the 16 subscales correlated significantly with curiosity posttest performance in the experimental group, whereas only three did so for the non-treatment group. This finding suggests that personality traits significantly influence learning which is done under stressful, emotionally upsetting conditions, but have little impact on learning done under neutral emotional conditions. This same general relationship is evident in relation to the hyperactivity learning task, but to a lesser degree.

The corresponding correlational data for the MAT reveals that only for the curiosity task was the number of significant correlations greater in the experimental group, as compared with the non-treatment group (three significant correlations versus one). For the hyperactivity task, the second hypothesis was not supported. Nevertheless, taken together, these data for the 16PF, MAT, and SSQ, reveal that the second hypothesis was confirmed, and that the statement by Kline (1979, p.223), that correlations of personality and motivational factors with
academic achievement are slight, cannot be sustained under conditions of
emotional arousal. Under these circumstances, the correlations become quite
substantial, and very numerous indeed. The combined influence on learning of all
these independent variables world appear to be considerable in this context.

In order to assess this combined influence on learning, forward stepwise
regression analyses were performed separately using total, curiosity, and
hyperactivity posttest scores as the respective criteria. While the sample sizes of
the experimental and non-treatment groups were too low to make a detailed
interpretation of these regression results in terms of the specific predictors which
entered the equations, what is more important was the multiple $R^2$ obtained in each
case. Most noteworthy was a 22 percent increase in predictive variance, as a result
of the horror film treatment. Thus for the total post-test, the independent variables
accounted for 60 percent of the achievement variance in the experimental group,
while only 38 percent of variance was accounted for in the non-treatment group.
The most significant predictor for the experimental group was Q3 (strength of self-
sentiment). This 16PF factor has typically correlated with school achievement in
the range of 0.20 to 0.25 (Cattell and Kline, 1977). However, for the experimental
group this correlation in relation to the total post-test was 0.39 as compared with
only 0.11 in the non-treatment group. While there were 10 significant predictors
for the experimental group, only five of the independent variables significantly
predicted total posttest performance for the non-treatment group. In this instance,
the major predictor was IQ, which correlated 0.35 with achievement.

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Tables 4 & 5

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Interestingly, IQ did not even rank among the top 10 predictors for the experimental group. This suggests that under conditions of stressful emotional arousal, learning outcomes are influenced predominantly by the combined effects of personality traits, motivational dynamics, and emotional states, which outweigh the influence of intelligence, *per se*. This finding has enormous implications for educational practice. The regression analysis for the curiosity post-test revealed that the independent variables entered into the predictive equation for the experimental group accounted for 55 percent of the achievement variance, while for the non-treatment group only 19 percent of the variance was explained. This represented a massive 36 percent increase in predictive variance due to the triggering of the independent variables presumably as a consequence of the horror film treatment. The hyperactivity task has already been shown above as less sensitive to the emotionally disturbing treatment and the regression results supported this finding, with the experimental group accounting for only 7 per cent more of the achievement variance than did the non-treatment group. This finding can safely be discounted given the explanation above concerning the hyperactivity task.

While both the 16PF and 8SQ factors were heavily implicated in the learning process, the MAT factors seemed to play little role, despite the emotionally disturbing treatment. However, the MAT is presumably situationally sensitive, being a measure of specific dynamic traits/motivational states. Since the MAT was administered three weeks prior to the actual learning experiment, the students' MAT scores were undoubtedly quite different from what they would have been at the time of the learning experiment itself (a trial administration of the SSQ on the same occasion as the MAT resulted in almost no significant posttest
correlations in either group, in contrast to the very potent correlations obtained at the time of the actual experiment). Presentation of the MAT at the same time as (immediately prior to) the emotionally disturbing treatment should, therefore, produced several significant correlations between MAT factors and posttest performance. This possibility would provide an interesting topic for a future study.

Conclusions

Failure to manipulate the intensity level of intrapersonal psychological factors other than intelligence has led to premature conclusions concerning the role of these factors in the learning process. Generally the correlations obtaining for personality, motivation, and mood state factors with learning are fairly small. However, all three domains, along with abilities, contribute significantly to the variance involved in learning, or any other given behaviour (Kline, 1980). The present study has shown unequivocally that under conditions of emotional activation, the influence of these non-ability variables is greatly augmented, as evidenced in the higher correlations with performance. This threshold of activation effect is not readily observed unless the learning materials represent a definite intellectual challenge (as occurred with the curiosity task).

Acknowledgement

The author acknowledges the kind advice of Professor K. B. Start and Professor G. V. Stanley of the University of Melbourne, in regard to certain aspects of this research.
References


Thorne, F. C. (1980). Technical problems in inventory construction for the

personality and biographical factors and the ability to predict academic

personality measures to ability measures for predicting and understanding


1, 43-54.
### TABLE 1
ANCOVA on Corrected Post-test Scores (N = 135)

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### TABLE 3
Correlations between Independent Variables and Post-test Scores

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</table>

* P<0.05; ** P<0.01; *** P<0.001.
Decimal points omitted.
### Table 4

Regression Results for Total Post-test (Experimental Group)

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>F to Enter</th>
<th>Signif.</th>
<th>Mult. R.</th>
<th>( R^2 )</th>
<th>( R^3 ) Change</th>
<th>Simple R.</th>
<th>Overall F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Q3</td>
<td>12.34</td>
<td>0.00</td>
<td>0.39</td>
<td>0.16</td>
<td>0.16</td>
<td>0.39</td>
<td>12.34</td>
</tr>
<tr>
<td>2</td>
<td>U-So</td>
<td>5.40</td>
<td>0.02</td>
<td>0.47</td>
<td>0.22</td>
<td>0.06</td>
<td>0.14</td>
<td>9.28</td>
</tr>
<tr>
<td>3</td>
<td>U-Cx</td>
<td>4.00</td>
<td>0.03</td>
<td>0.52</td>
<td>0.27</td>
<td>0.05</td>
<td>-0.06</td>
<td>9.33</td>
</tr>
<tr>
<td>4</td>
<td>R</td>
<td>5.51</td>
<td>0.03</td>
<td>0.57</td>
<td>0.22</td>
<td>0.06</td>
<td>0.21</td>
<td>7.99</td>
</tr>
<tr>
<td>5</td>
<td>St</td>
<td>4.04</td>
<td>0.05</td>
<td>0.60</td>
<td>0.36</td>
<td>0.04</td>
<td>0.24</td>
<td>7.17</td>
</tr>
<tr>
<td>6</td>
<td>Ex</td>
<td>8.54</td>
<td>0.01</td>
<td>0.66</td>
<td>0.44</td>
<td>0.08</td>
<td>-0.15</td>
<td>8.11</td>
</tr>
<tr>
<td>7</td>
<td>U-Sw</td>
<td>5.52</td>
<td>0.02</td>
<td>0.70</td>
<td>0.49</td>
<td>0.05</td>
<td>0.20</td>
<td>8.25</td>
</tr>
<tr>
<td>8</td>
<td>U-Na</td>
<td>4.41</td>
<td>0.04</td>
<td>0.72</td>
<td>0.52</td>
<td>0.04</td>
<td>0.17</td>
<td>8.17</td>
</tr>
<tr>
<td>9</td>
<td>Kg</td>
<td>5.86</td>
<td>0.02</td>
<td>0.75</td>
<td>0.56</td>
<td>0.04</td>
<td>-0.28</td>
<td>8.51</td>
</tr>
<tr>
<td>10</td>
<td>U-As</td>
<td>5.43</td>
<td>0.02</td>
<td>0.78</td>
<td>0.60</td>
<td>0.04</td>
<td>-0.16</td>
<td>8.82</td>
</tr>
</tbody>
</table>

### Table 5

Regression Results for Total Post-test (Non-Experimental Group)

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>F to Enter</th>
<th>Signif.</th>
<th>Mult. R.</th>
<th>( R^2 )</th>
<th>( R^3 ) Change</th>
<th>Simple R.</th>
<th>Overall F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IQ</td>
<td>8.66</td>
<td>0.01</td>
<td>0.35</td>
<td>0.12</td>
<td>0.12</td>
<td>0.35</td>
<td>8.66</td>
</tr>
<tr>
<td>2</td>
<td>U-Na</td>
<td>5.91</td>
<td>0.02</td>
<td>0.44</td>
<td>0.19</td>
<td>0.08</td>
<td>0.30</td>
<td>7.61</td>
</tr>
<tr>
<td>3</td>
<td>Ex</td>
<td>5.89</td>
<td>0.02</td>
<td>0.51</td>
<td>0.26</td>
<td>0.07</td>
<td>0.22</td>
<td>7.43</td>
</tr>
<tr>
<td>4</td>
<td>Kg</td>
<td>5.43</td>
<td>0.02</td>
<td>0.57</td>
<td>0.32</td>
<td>0.06</td>
<td>-0.19</td>
<td>7.33</td>
</tr>
<tr>
<td>5</td>
<td>Aa</td>
<td>5.05</td>
<td>0.03</td>
<td>0.61</td>
<td>0.38</td>
<td>0.05</td>
<td>0.10</td>
<td>7.26</td>
</tr>
</tbody>
</table>