



Project Report Summary

'Learning Styles' and 'Approaches to Studying' in Sports-Related Programmes: Relationships to Academic Achievement and Implications for Successful Learning, Teaching and Assessment

Dr Derek Peters, Gareth Jones & Dr John Peters
University College Worcester

Introduction

There are relatively few recent investigations that have addressed the issues of preferred learning styles and approaches to studying in sports-related disciplines such as: Sports Studies; Sports and Exercise Science; Coaching Science; Sport and Leisure Management and Outdoor Recreation Management. The purpose of this study was therefore to examine student learning across a range of sport-related programmes at a UK University College. It applied tools from two related, but different, educational research paradigms: approaches to learning and learning styles analysis. Thus, these differing means of researching student learning were tested against the same student group. Results were compared to students' perceptions of their own developing autonomy of learning and achieved grades; insights were generated into the particular learning approaches and styles of sports students; and tentative recommendations are made on the implications of the findings for higher education teachers seeking to promote improvements in the learning of sports students.

Objectives

1. Identify and evaluate the 'preferred learning styles' of students in each of the three levels undertaking sports-related undergraduate programmes at University College Worcester (UCW) and its partner colleges.

2. Identify and evaluate the 'approaches to studying' employed by students in each of the three levels undertaking sports-related undergraduate programmes at UCW and its partner colleges.
3. Investigate student perceptions of 'learning styles' and 'approaches to studying' through interview techniques.
4. Explore the relationships between 'learning styles', 'approaches to studying' and grade profiles of students in each of the three levels undertaking sports-related undergraduate programmes at UCW and its partner colleges.
5. Formulate recommendations and proposals for guidelines on good practice for learning, teaching and assessment based on discipline specific evidence.

Method

The Approaches to Studying Questionnaire (ASQ – Richardson, 1990), and the Perceptual Learning Style Preference Questionnaire (PLSPQ - Reid, 1987) were administered to every student in each year of the sport-related HE programmes at UCW and its partner colleges (n=450). Responses were coded and entered into SPSS version 11.5.

Students were asked to volunteer to complete the questionnaire and at the end of the questionnaire, students were also requested to tick a box if they would be happy to subsequently discuss their answers with the research team. The students who had indicated that they were willing to discuss their answers further were then contacted to arrange focus groups. One focus group was then conducted with the limited number of students who still wished to continue their involvement in the research project.

The majority of students (77%) had come through the traditional route from A-levels, 23% had not. Mature students represented only 7% of the cohort and there was a limited spread of ethnicity.

In order to calculate current grade profiles for each student, the marks for the four modules undertaken in the same semester in which the research data was collected were obtained. The mean of these marks was calculated and categorised into the corresponding grade bands according to UCW marking and grading criteria. Extensive data was collected and analysed using a wide range of established approaches.

Discussion

Method

The decision to use the 32-item Approaches to Studying Questionnaire with this sample of students would appear to have been problematic as none of the proposed eight subscales of the questionnaire demonstrated sufficient internal consistency to be considered as reliable in this sample.

Further development of the ASQ with students from such hands-on, participatory course programmes would therefore be advocated along with the critical evaluation of any questionnaire used that has been shown previously to be reliable and valid when used with different populations of participants. Indeed, this will now be a continuing research process for the authors.

The Perceptual Learning Style Preference Questionnaire was found to be valid and reliable in this sample with the six subscales clearly identifiable by PCA and supported by internal consistency statistics with the deletion of only two items.

Results

Gender differences were apparent for perceived rating of autonomy with females ranking themselves more autonomous than males. This was accompanied by the female perception of having higher grade profile that was also reflected in higher actual grade category than males. No gender difference was apparent for meaning orientation, however, but females were significantly higher on the reproducing orientation. These findings may support the observation that females may apparently be more able to select the necessary approach to study for achievement of the task at hand.

Progression towards autonomy and indeed significantly higher grades throughout the three years at UCW was observed through significant year group differences. This progression and congruence between autonomy and grade may be resultant from the strategic approach by UCW to specifically develop this aspect of student learning through the learning outcomes policy that necessitates progression to higher order, more autonomous learning outcomes with progressing years.

No significant grade differences were apparent between the Undergraduate Modular Scheme (UMS) and HND programmes. This was a particularly interesting outcome as the numbers of students on each module tends to be higher on the UMS than the HND scheme, necessitating the employment of different ratios of large group and small group learning and teaching methods. No significant differences were observed in actual grade between mature and non-mature students, between course programmes or between entry-level qualifications. This offers considerable evidence for the effective integration of students from diverse backgrounds into Higher Education.

The learning styles preferred by the sample appeared to be the auditory, kinesthetic and group learning styles with no significant gender, or maturity status differences apparent. This may reflect the nature of the course content with vast amounts of the course programmes taught through practical, kinesthetic, experiential learning. Having said this, the majority of the students (94%) demonstrated the use of more than one major preferred learning style.

Significant difference in preferred learning styles was found between year three and year one for the auditory learning style, with the third year group demonstrating significantly greater auditory preference category. This would again appear to be congruent with the significantly greater level of autonomy in year three as the definition of the auditory learning style included the ability to learn from class discussion and conversing with tutors.

Difference in learning style across the course programmes was observed, primarily in relation to the HND outdoor recreation management group and the UMS sports studies and sport and exercise science students. The outdoor recreation students were more tactile and less auditory. This again may be explained by the nature of their course that focuses heavily on performance and practical skills within a 'competency-based' curriculum.

Grade category was weakly correlated with individual learning style (+ve) and group learning style (-ve). Although the relationships were weak, this may indicate that the students who are attracted to the group-learning environment and develop (or have already developed), the group learning style preference, do so as they are allowed to take advantage of the opportunity to 'social loaf' (Latane, Williams, and Harkins, 1979). Individual learning style preference students would anecdotally prefer not to undertake group work as they perceive the group environment as dissolution of their own abilities amongst less able students.

Determined from the two-factor model of meaning and reproducing orientation, no gender difference was apparent for meaning orientation but females were significantly higher on the reproducing orientation.

Weak, but significant relationships were found between meaning orientation and level of autonomy, and meaning orientation and actual grade category would appear to be congruent with multiple previous findings. The relationship between approach to study and academic achievement in this sample is further supported by the presence of a weak but significant *negative* relationship between reproducing orientation actual and grade category.

Mature students demonstrated both significantly higher meaning and significantly lower reproducing orientation than non-mature students and as such followed previously documented traits (Kreber, 2003; Richardson, 1994), but these differences were not accompanied by significantly higher grades.

No differences were found across course programmes or course programme schemes for either meaning or reproducing orientation, supporting the absence of significant grade category differences between the programmes or schemes and potentially identifying the presence of a similar learning and teaching experience/environment in each.

When relating preferred learning style and different approaches to study, weak significant positive relationships existed between meaning orientation and auditory, kinesthetic and tactile preferred learning style categories. These relationships would appear to support anecdotal impressions that the sports students prefer to learn through practical experience and hands-on activities, supported and supplemented by discussion and verbal instruction.

Having identified the relationship between deep or meaning approach and auditory, kinesthetic and tactile preferred learning style category, it was also evident that the adoption of greater preference for any of these learning styles was not associated with greater academic achievement. Indeed, actual grade category was only significantly positively associated with individual learning style preference category. This suggests that although adopting a hands-on, practical and discursive learning style that related weakly to enhanced meaning orientation, the way in which grades are attained does not reflect this.

There would therefore appear to be some argument towards constructive re-alignment of the assessment strategy towards practical, hands-on methods for the achievement of module learning outcomes where possible, in order to build upon the learning strengths of the student population. Alternatively, concentrating on enhancing the ability of the student to convey the practically attained deep learning via written and oral communication may prove more beneficial for the preservation of academic rigour.

The evidence is not available from this research whether the learning styles evident in the sample are caused by individual choice, current and previous educational and learning environment, strategic approaches to achievement or indeed a combination of them all.

Conclusions

Cross-sectional evidence has identified increased self-rated level of autonomy in successive levels of undergraduate programmes that was related to higher grades. No evidence was found however, to indicate greater deep approaches to studying or greater levels of meaning approach in successive year groups.

Preferred 'learning styles' in students in this discipline have been identified as auditory, kinesthetic and group although the vast majority of students are multi-modal in their learning preferences. The data demonstrated relationships between greater meaning orientation, greater perceived autonomy and achieving higher grade categories and a negative relationship between reproducing orientation and actual grade. Despite this, only individual learning style preference was positively related to higher grade category and group learning style preference was negatively related to grade category.

Formulation of proposals for good practice for constructive alignment of 'learning styles' and 'approaches to studying' evident in the different sub-disciplines of 'sport'

have been made, with the methods of learning, teaching and assessment potentially most effective for maximising student academic achievement having been identified.

It must be maintained however, that regardless of the findings of this study and the recommendations made, it is no simple matter to read-off possible changes in teaching methods and learning environment that could or should be made in response to data on student learning styles and approaches to learning. Because learning styles are seen largely as personal attributes of the learner, it would seem the best response would be to tailor sports learning activities to best fit the learning styles of sports students. Yet, although the leaning of these sports students towards particular learning styles is noticeable, there are still indications of both a reasonable spread of styles and of students combining styles. It might, then, be a matter of rebalancing learning opportunities to emphasis particular learning styles while still seeking to ensure that all learning styles are supported. Of course, the emphasis on particular learning styles already exhibited by this, and other, sports programmes might already be inclining certain types of learner to undertake HE sports study.

In terms of approach to learning, the context specific nature of the approach adopted by the learner would suggest that it might be possible to change the approach adopted by alteration to the context. Thus a deep approach to learning might be engendered by alterations to the curriculum, teaching methods and assessment. However, despite the institution's design of assessment criteria to reward deep learning and a progression framework based on increasing student autonomy, there is limited evidence that any transformation in students' approaches to learning has occurred. Rather, it seems that, approaches to study have proven difficult to influence and may be context specific without being amenable to change.

References

- Kreber, C (2003) The relationship between students' course perception and their approaches to studying in undergraduate science course: a Canadian experience. *Higher Education Research and Development*, 22(1), 57-75.
- Latane, B, Williams, K and Harkins, S (1979) Many hands make light work: The causes and consequences of social loafing. *Journal of Personality and Social Psychology*, 37, 822-832.
- Reid, J M (1987) The learning style preferences of ESL students, *TESOL Quarterly*, 21(1), 87-111.
- Richardson, J T E (1990) Reliability and Replicability of the Approaches to Studying Questionnaire. *Studies in Higher Education* 15(2), 155-168.
- Richardson, J T E (1994) Mature students in higher education: I. A literature survey on approaches to studying. *Studies in Higher Education*, 9(3), 309-326.

A full copy of this research report is available by contacting hlst@brookes.ac.uk