



New E|Educational Review

2011
Vol. 23. No.1

© Copyright by Wydawnictwo Adam Marszałek
Toruń 2011

ISSN 1732-6729

Prenumeratę instytucjonalną można zamawiać w oddziałach firmy Kolporter S.A. na terenie całego kraju.
Informacje pod numerem infolinii 801 205 555 lub na stronie internetowej
<http://www.kolporter-spolka-akcyjna.com.pl/prenumerata.asp>

WYDAWNICTWO ADAM MARSZAŁEK, ul. Lubicka 44, 87-100 Toruń
tel./fax 56 648 50 70; tel. 56 660 81 60, 56 664 22 35
e-mail: info@marszalek.com.pl www.marszalek.com.pl

Drukarnia nr 1, ul. Lubicka 46, 87-100 Toruń, tel. 56 659 98 96

CONTENTS

<i>Stanisław Juszczak</i> Editor's Preface	13
■ SOCIAL PEDAGOGY	
<i>Beata Kosová, Štefan Porubský</i> The Development and Transformation of the School System in the Slovak Republic after the Fall of the Totalitarian Regime from the Aspects of Educational Policy, Educational Practice at the Level of Primary Schools, and University Preparation of Teachers	19
<i>Diana Damean</i> Determinants of Parent Involvement in Romanian Schools	35
<i>Inetta Nowosad</i> Extracurricular Classes at School as Research Area and Point of Interest of Educational Policies	53
<i>Jan Lašek, Jindra Novotná, Klára Kostková</i> Dealing with a Moral Dilemma by Five Groups of Children from Five States of the EU	65
<i>Jelena Petrucijová</i> Identity Issue in the Context of Civic and Inter-Cultural Education	79
<i>Jan Sebastian Novotný</i> Academic Resilience: Academic Success as a Possible Compensatory Mechanism of Experienced Adversities and Various Life Disadvantages	91
<i>Enikő Albert-Lőrincz, Márton Albert-Lőrincz, Annamária Kádár, Tímea Krizbai, Réka Lukács-Márton</i> Relationship between the Characteristics of the Psychological Immune System and the Emotional Tone of Personality in Adolescents	103
<i>Joanna Król</i> “Tyranny of the Moment” in Education – a Social-Pedagogical Dimension of the Phenomenon	115

■ TECHNOLOGY OF EDUCATION

Ming-Li Tung, Tai-Ching Chiang, Bing-Yuh Lu

Comparison of the Numbers of Searching Results in Website Engines
between 2007 and 2009: Perspectives in Language Policy 127

Chun-Ying Chen, Susan Pedersen, Karen L. Murphy

Learners' Perceived Information Overload in Online Learning via
Computer-mediated Communication 141

Hülya Kaya, Hatice Şen, Ayla Keçeci

Critical Thinking in Nursing Education: Anatomy of a Course 159

*Milica Gerasimovic, Ljiljana Stanojevic, Ugljesa Bugaric, Zoran Miljkovic,
Alemoije Veljovic*

Using Artificial Neural Networks for Predictive Modeling of Graduates'
Professional Choice 175

Ersun Iscioglu

Perceived Computer Self-Efficacy of Secondary Education Teachers 189

Kateřina Kostolányová, Jana Šarmanová, Ondřej Takács

Classification of Learning Styles for Adaptive Education 199

Murat Peker, Erhan Ertekin

The Relationship between Mathematics Teaching Anxiety and
Mathematics Anxiety 213

Suleyman Yaman

The Optimal Number of Choices in Multiple-Choice Tests: Some
Evidence for Science and Technology Education 227

■ GENERAL DIDACTICS

Şenol Erdoğan, Eylem Koç

Using Kansei Engineering to Improve the Physical Environment of the
Classroom 245

Liliana Ciascai, Lavinia Haiduc

The Opinion of Romanian Teachers Regarding Pupils Learning
Science. Implication for Teacher Training 255

■ PEDEUTOLOGY

Jelisaveta Safranj

- Reflections of English Language Teachers Concerning Computer Assisted Language Learning (Call) 269

Muhammet Uşak, Mehmet Erdogan, Hatice Z. Inan, Milan Kubiato, Mehmet Şahin

- Investigation of Prospective Teachers' Approaches to Learning in Biology and Ecology 283

Michaela Pířová, Klára Kostková

- Professional Learning of Student Teachers and Its Support During Clinical Practice (Humanistic and Neo-humanistic Trends in Action) ... 295

■ MANAGEMENT OF EDUCATION

Kazi Enamul Hoque, Gazi Mahabubul Alam, Muhammad Fizal A. Ghani

- Principals' Roles under School Based Management that Influence School Improvement 311

Saeid Moradi Rekabdarkolaei

- Studying Effective Factors of Classroom Control and Management in Primary Schools 325

Fatih Töremen, Önder Şanlı

- The Effect of Positive Management Approach on the Success of Students 337

Osman Titrek, Öznur Çelik

- Relations between Self-Awareness and Transformational Leadership Skills of School Managers 355

■ SPECIAL PEDAGOGY

Loh Sau Cheong, Ow Siew Hock, Chew Fong Peng, Zahari Ishak, Lee Siew Gim

- Use of Visual Auditory Simulation Tasks in Promoting On-Task Behaviour of Children with Special Needs 373

Zenon Gajdzica

- Defining Intellectual Disability by Teachers of Mainstream Schools as a Marker of their Competence in Special Education 381

■ CHRONICLE*Łukasz Tomczyk*

Book review: Magdalena Szpunar, *Internet w procesie realizacji badań*,
Wydawnictwo Adam Marszałek, Toruń 2010, pp. 180 397

*Muhammet Uşak, Mehmet Erdogan,
Hatice Z. Inan, Milan Kubiato,
Mehmet Şahin*
Turkey

Investigation of Prospective Teachers' Approaches to Learning in Biology and Ecology

Abstract

The aim of this study was to investigate Turkish college students' learning approach regarding biology and ecology classes along with the effects of some selected variables (gender, teacher, year of study, grade in biology and grade in ecology) on students' learning approach. The Turkish version of the Learning Approach Questionnaire was utilized for gathering data. The sample consisted of 173 female and 238 male (411) university students from two different departments at three different universities in Turkey. In this investigation, no statistically significant differences in terms of gender, teacher, and year of study, grade in biology and grade in ecology were found. Inferential statistics, mainly ANOVA, were used for testing the effects of selected variables on their learning approach.

Introduction

Teaching and learning processes are complex phenomena which cannot be explained by one or more reasons/factors. For years, teachers, administrators, and researchers have done research into teaching and learning and examined a variety of approaches to teaching and learning (Chamorro-Premuzic, Furnham 2009; Yang, Tsai, 2010). Referring to White's (2001) documents on the revolution in research on science teaching after World War II, Shapiro (2004) states that "the emerging body of research on and insight into learning fuelled the development of shift from behaviorism to cognition as a new dominant model of learning" (p.2). However, the shift to cognitive perspectives, such as constructivist approaches, did not end here. Shapiro also discusses the increased interest among researchers

in studying the relationship between the learner and the context (e.g., Helldén, 2004) while still stressing the importance of the learner's construction of his/her own knowledge. Recently, researchers have started to focus upon interpretative perspectives like phenomenography as an approach to both the process of teaching and learning examining such a relationship. Many dimensions are involved in these sophisticated phenomena of teaching and learning. The current study does not attempt to identify all the facets of teaching and learning, but investigates the multidimensionality of teacher candidates' learning approaches to science through the use of the Revised Learning Process Questionnaire [R-LPQ-2F] (Kember, Biggs, & Leung, 2004).

The R-LPQ basically depends on the theory of Student Approaches to Learning [SAL] (Biggs, 1993), which premises the idea that students have motives for learning the subject of interest and those motives influence the way they choose for their learning (Phan & Deo, 2007). As a research tool, the R-LPQ helps understand students' learning approaches, namely Surface and Deep approach, utilizing the SAL theory (Kember, Biggs, & Leung, 2004).

The idea of an "approach to learning" was derived from the qualitative studies by Marton and Säljö (1976), where they identified two opposing student perceptions about a particular reading task. The approaches to learning represent students' ideas or conceptions of learning (Säljö, 1982), their experience about the learning situation, their learning strategies, and the intrinsic or extrinsic motives they have for their learning. Students with a deep approach to learning have motives to understand the real meaning of the topic, are interested in the subject matter, relate new information to their previous knowledge using evidence critically. On the other hand, students adopting a surface approach perceive the learning tasks as independent of each other, intend to reproduce the learning material, have the motive to avoid failure, and memorize the topic for an exam without understanding. (Biggs, 1987; Byrne, et al., 2001).

The researchers in the current study inquired about students' learning approaches in biology and ecology classes in three Turkish universities. The study considers complex interrelationships of learning approaches with five variables, namely, gender, teacher, year of study, and biology and ecology course grades. The uniqueness of this study relies not only on the discipline but also on the variables involved.

Methodology

Sample

The participants of the study consisted of 411 (173 females and 238 males) university students selected from science education and elementary school education departments at the Faculty of Education of three public universities in Turkey in the 2008–09 academic year. The survey was anonymous and confidentiality of the students was ensured. Before administration in the classroom environment, the purpose of the study was explained and the students were asked to be as fair as possible while responding to the items. Participation in this survey study was realized on the voluntary basis.

Our preliminary analyses did not reveal any differences in attitudes or achievement between the three participating universities, so the data were pooled together. The students' scores in biology classes were converted into a single biology score. The average achievement score was calculated for those who reported more than one biology score. Thus, the average of all the students' biology scores was found to be 74.22 (SD = 13.93, Range = 40–100). 33 students did not report their biology score.

Data Collection

The Turkish version of the Learning Approach Questionnaire adapted by Colak and Fer (2007) from its original form was used as a data collection instrument. For the present study, we made a reliability analysis for both scales and sub-scales. Table 1 presents the Cronbach's alpha values for scales and sub-scales.

Table 1. The values of Cronbach's alpha for the two approaches and four subscales

<i>Scales</i>	Cronbach's alpha values in the original form	Cronbach's alpha values for the Turkish version	Cronbach's alpha values for the last administration of the Turkish version
Deep approach	.82	.79	0.74
Surface approach	.71	.72	0.52
<i>Sub-scales</i>			
Deep Motive	.62		0.61
Deep Strategy	.63		0.64
Surface Motive	.72		0.37
Surface Strategy	.57		0.50

Data Analysis

From the other statistical methods we used ANOVA, when we were trying to find out differences in overall score between variables (gender, teacher, year of study, grade in biology and grade in ecology). Next, we found out statistically significant differences in the results of subscales between the variables. We used t-test, where there were two groups (teacher, gender) and in the other variables ANOVA was used. Next, we used Pearson's product moment for finding correlations among subscales.

Results

Series of analyses of variance were conducted in order to examine the effects of gender, grade, and teacher, grade in biology and grade in ecology on students' approaches to learning. Table 2 shows the values of ANOVA results. However, no significant main effects of the selected variables were observed. A detailed analysis with mean and standard deviation scores showed that science teachers (major) achieved higher mean score ($M = 3.01$, $SD = 0.04$) in comparison with classroom teachers (non-major) ($M = 2.96$, $SD = 0.03$). When the year of study was compared, the students of the third and fourth years of study achieved the highest mean scores (4th year of study – $M = 3.00$, $SD = 0.06$; 3rd year of study – $M = 3.00$, $SD = 0.03$). The lowest scores were achieved by the freshmen ($M = 2.93$, $SD = 0.08$) and the sophomores achieved a little bit higher scores in comparison with freshmen ($M = 2.95$, $SD = 0.04$). The males ($M = 3.00$, $SD = 0.03$) achieved higher score in comparison with the females ($M = 2.95$, $SD = 0.03$). Even though no significant result was obtained, the students with grade A in biology achieved higher mean scores ($M = 3.04$, $SD = 0.07$) than those with B, C, D and E. Similarly, those with grade A achieved higher mean scores ($M = 3.07$, $SD = 0.05$) than those with B, C, D and E.

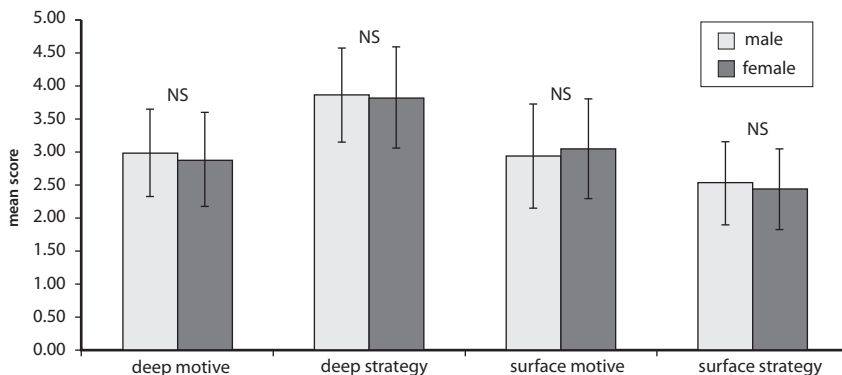
Table 2. ANOVA values of variables

Individual effects	<i>df</i>	<i>F</i>	<i>p</i>
Teacher	1	1.93	0.17
Year of study	3	0.64	0.59
Gender	1	1.44	0.23
Grade in ecology	4	1.49	0.20
Grade in biology	4	1.32	0.26

When we made detailed view on the results of the subscales and we tried to find out differences in the results with regard to selected variables (gender ...etc),

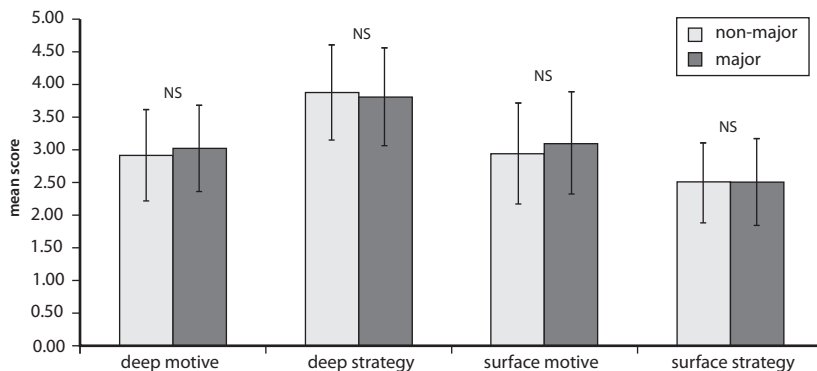
it was observed that the males and females did not differ in any of the subscales (cf. Figure 1). The males achieved higher scores in all the subscales except surface motive, where the females were more successful. The biggest difference between the scores of the females and males appeared in the subscale of “surface motive”

Figure 1. Mean scores of males and females in subscales of learning approach. (NS = non significant)



The statistically significant difference in the results was not found between those at the science education department (major) and those at the classroom teaching department (non-major) (cf. Figure 2). The prospective science teachers achieved higher mean scores in the subscales of “deep motive” and “surface motive” whereas the prospective classroom teachers demonstrated higher scores for the sub-scale

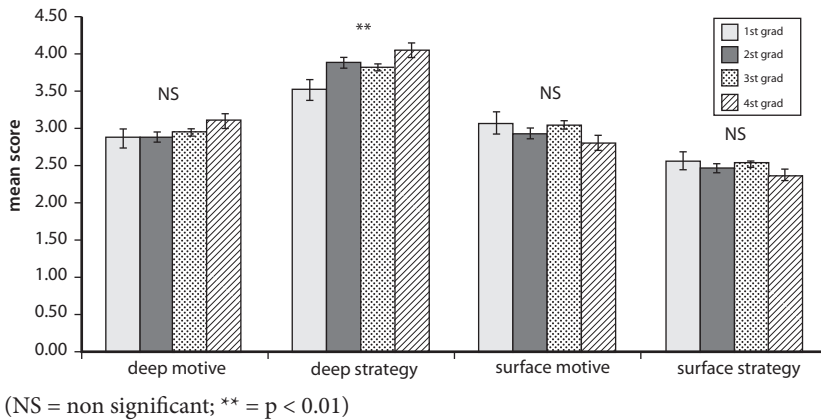
Figure 2. Mean scores of science teachers and classroom teachers in subscales of learning approach. (NS = non significant)



of deep-strategy. The biggest difference between the scores of the prospective classroom and science teachers was found in the subscale of surface motive in favor of the prospective science teachers.

On the other hand, a significant difference was observed among the students with regard to the grade level (Wilk's lambda = 0.95, $F(12, 1069) = 1.77$, $p < 0.05$). In detailed analysis, a statistically significant difference was found in the subscale of "deep strategy" in favor of these in the 4th grade. Using the Tukey post-hoc test there was a statistically significant difference found between the freshmen and the 4th year students ($p < 0.01$), where the freshmen achieved the lowest mean score and the 4th year students the highest one in this subscale (cf. Figure 3). The freshmen also achieved the lowest score in the subscale of "deep motive", but in the next two subscales they achieved the highest score in comparison with other students. The 4th year students achieved the highest mean score in the subscale of "deep motive" and in the other two subscales (surface motive and surface strategy) they achieved the lowest mean score in comparison with those in other grades.

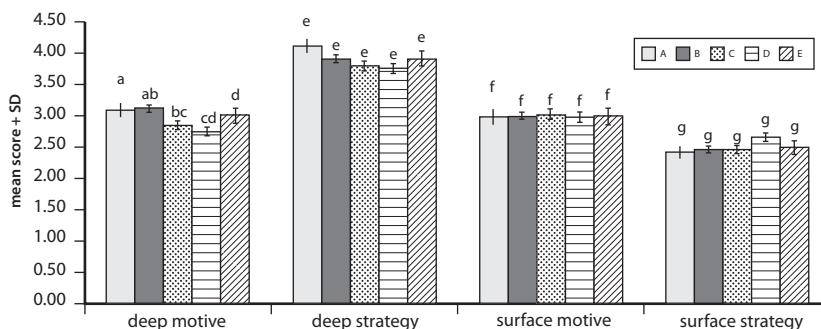
Figure 3. Mean score of students' year of study in subscales of learning approach



By the evaluation of grades in subject areas (in this case biology and ecology), the statistically significant difference was found only in the subject of biology (Wilk's lambda = 0.92, $F(16, 1231, 8) = 2.01$, $p < 0.05$), but not for the subject of ecology (Wilk's lambda = 0.95, $F(16, 1231, 8) = 1.19$, $p = 0.27$). Concretely, it was in the subscale of "deep motive", where using the Tukey post-hoc test, the statistically significant difference was found between those with grade D and those with grade B ($p < 0.01$) and between those with grade C and those with grade B ($p < 0.05$).

(Figure 4). The students with grade D achieved the lowest mean score in all the subscales, except the subscale of “surface strategy”, where they achieved the highest mean score. In the subscale of “deep strategy” the most successful were those with grade A, their mean score was higher than 4.00 which was only observed in this subscale. In the subscale of “surface strategy” these students (with grade A) achieved the lowest mean score. The students with all the grades showed similar results for the subscale of “surface motive”.

Figure 4. Mean scores of students with different grades in biology in the subscales of learning approach.



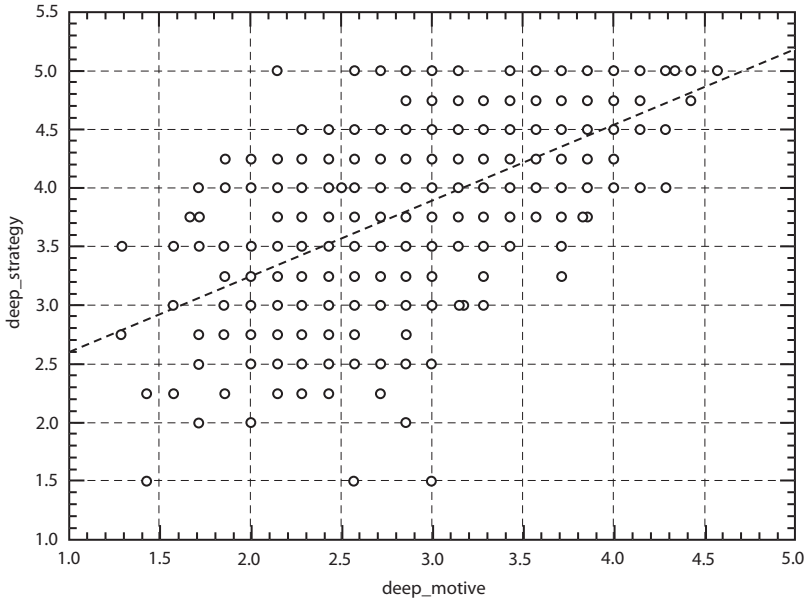
(Letters denote differences based on Tukey post-hoc test; ab vs. bc $p < 0.05$ and ab vs. cd $p < 0.01$; a, d, e, f and g are not different from others).

Using Pearson's product moment assured an available distribution of items to subscales. As seen in Table 3, the items in the deep approach subscales achieved a relatively high correlation ($r = 0.55$). This value confirms that the students with deep motive use deep strategy. This relation is confirmed by Figure 5. The “deep motive” subscale achieved a statistically significant correlation with the “surface motive” subscale, but the value of the correlation was low.

Table 3. Values of Pearson's correlation between subscales of learning approaches (values in bold are statistically significant $p < 0.05$).

	deep strategy	surface motive	surface strategy
deep motive	0.55	0.15	-0.01
deep strategy		0.07	-0.08
Surface motive			0.21

Figure 5 The correlation between the subscales of deep motive and deep strategy.



Discussion

By using a questionnaire it was found that the students achieved a score approximately 3.0, so general recapitulation could be that the students have got an average learning approach to biology and ecology. They do not show high commitment to work, but the reasons why they are studying these two subjects are not only for qualification, and their learning strategy is somewhere between understanding and memorization.

Although the questionnaire was created by other researchers, we calculated Cronbach's alpha of two main scales and also sub-scales. In two main scales, Cronbach's alpha reliability coefficient values ranged from 0.52 to 0.74, and the reliability coefficients ranged from 0.37 to 0.64 in further sub-scales. In the paper by Kember, Biggs and Leung (2004), reliability coefficients were observed to be higher, but similar to those found in our research.

In this investigation, no statistically significant differences were found in terms of gender, teacher, and year of study, grade in biology and grade in ecology. Inferential statistics, mainly ANOVA, was used for testing the effects of selected variables on

their learning approach. A detailed analysis of the results showed that the biggest difference emerged between those in science education program and those in classroom teaching program in favor of those in science education program. The difference was very little in the other variables.

When the subscales were evaluated, we found statistically significant differences in the results in the subscale of deep strategy and post-hoc test with Tukey procedure indicated that a difference was only observed between the freshmen and the 4th year students. The freshmen achieved statistically significant lower scores in comparison with the 4th year students. This result predicts that the freshmen students are influenced by the high school learning approaches, where the content of school subjects was constructed by other methods. The content of college curriculum is more comprehensive and more demanding. The older students are probably better at the time management of learning activities in comparison with the younger students, who came to the college from high school. Next statistically significant difference was found in the subscale of deep motive in the variable grade in biology. The students with grade B achieved statistically significant higher scores in comparison with the students with grades C and D in biology. This result shows that the more successful students know what to learn and, what is important, how to learn. They are more successful determining what is important for the successful command of examinations in comparison with the students who achieved worse grades.

Parallel to the findings of Ling et al. (2005), where they reported a significant difference between Australian undergraduate and postgraduate students, and also where postgraduate students used more deep approaches and undergraduate students used more surface approaches to their learning, older students achieved higher scores in subscales regarding the deep approach in comparison with younger students and younger students achieved higher scores in subscales regarding the surface approach. Similar findings were presented by Matthews (2004), according to which older students achieved higher scores in subscales regarding the approach to learning (achieving motivation and achieving strategy). In concordance with Matthews, it can be affirmed that older students would appear to be more highly motivated to succeed in their studies than younger ones. They seem to be motivated to make more effort and study harder than younger students and to use strategies that assist them to achieve better results. Their motivations and strategies are guided by the need to achieve that comes from family, teachers and others in their home countries. These results are consistent with the research reported by Ward and Kennedy (1993).

The females achieved higher scores in the subscales of deep approach in comparison with the males. Similar results were shown in the study by Matthews

(2004). Zhang Zhen (2001) commented that women had a stronger motivation to achieve than men and that this effect was particularly observed to be strong in contemporary Asian women who live in urban environments. Another study focused on gender was conducted by Picou, Gatlin-Watts and Packer (1998). Their results showed that female students followed the concrete sequential learning approach, whereby these individuals preferred factual over abstract concepts with a tendency to break down problems into logical steps, to a greater extent than male students. In contrast, male students preferred the abstract sequential learning style, where one was not deterred by poorly organized materials, but was a good reader and an intent listener. Cano (2005) showed that older female students tended to score higher on the deep and achieving approaches to learning than younger male students. However, he noted that these results may have been tempered by academic demands such as a dense curriculum and time limitations. Research also appears to confirm the conclusions that (a) deep and achieving approaches to learning tend to be associated with academic success and (b) surface approaches are negatively linked to learning (Cano, 2005).

Our study was focused on the influence of grades in biology and ecology on learning approaches. The students who achieved grades A or B obtained higher scores in the subscales of deep approach in comparison with C, D or E students. Spicer (2004) studied the relationship between academic achievement and approaches to learning between two separate sub-samples of students, one of final year students studying Human Resources Management (n=107) and the other sample of second year students enrolled in a Bachelor of Work Behavior and Performance (n=72) at an English University. The results showed positive correlations between academic achievement as measured by annual grade average and learning approach whereby the generative approach to learning was linked to higher performance. Furthermore, Cano (2005) concluded that epistemological beliefs and approaches to learning change as students advance in their academic pursuits and that the relationship between epistemological beliefs and intellectual or academic outcomes such as Grade Point Averages (GPAs) may be mediated by students' approaches to learning. Wilding and Andrews (2006) found that a higher GPA was related to greater use of the achieving approach to learning with a concomitant decrease in importance of wealth and status goals. They also found that older students with higher entrance scores on the British Advanced ('A' level) examinations tended to achieve better academic results overall, regardless of the academic discipline.

Ng and Renshaw (2003) correlated achievement goals with values that were assumed to mediate and influence the means of achievement. The results of the

study showed that mastery goals were associated with motivation or engagement patterns and strategies that were consistent with a deep approach to learning. This approach was related to positive learning outcomes. In contrast, performance goals were associated with motivations and strategies that tended to be superficial in nature and consistent with a surface approach to learning and yielded a lower level of achievement (Grant and Dweck 2001).

Bibliography

- Biggs, J.B. (1987). *Student approaches to learning and studying*. Camberwell, Victoria: Australian Council for Educational Research.
- Biggs, J.B. (1993). What do inventories of students' learning processes really measure? A theoretical review and clarification. *British Journal of Educational Psychology*, 63, 1–17.
- Byrne, M., Flood, B. & Willis, P. (2001). The relationship between learning approaches and learning outcomes: A study of Irish accounting students. *Accounting Education*, 11(1), 27–42.
- Cano, F. (2005). Epistemological beliefs and approaches to learning: Their change through secondary school and their influence on academic performance. *British Journal of Educational Psychology*, 75, 203–221.
- Chamorro-Premuzic T, Furnham A. (2009) Mainly Openness: The relationship between the Big Five personality traits and learning approaches. *Learning and Individual Differences*, 19(4), 524–529.
- Çolak, E. & Fer, S. (2007) The Bilingual Equivalence, Validity And Reliability Of The Learning Process Questionnaire, *Ç.Ü. Sosyal Bilimler Enstitüsü Dergisi*, 16(1), 197–212.
- Grant, H., & Dweck, C.S. (2001). Cross-cultural response to failure: considering outcome attributions with different goals. In F. Salili, C.Y. Chiu and Y.Y. Hong (Eds.), *Student motivation: The culture and context of learning*. (Plenum series on human exceptionality) (pp. 203–219). New York: Plenum Publishers.
- Helldén, G.F. (2004). A study of recurring core developmental features in students' conceptions of some key ecological processes. *Canadian Journal of Science, Mathematics, & Technology Education*, 4(1), 59–76.
- Kember, D., Biggs, J., & Leung, D.Y.P. (2004). Examining the multidimensionality of approaches to learning through the development of a revised version of the Learning Process Questionnaire. *British Journal of Educational Psychology*, 74(2), 261–279.

- Ling, P., Arger, G., Filonenko, I., Chua, H., & Yin, C. (2005). Approaches to study: A comparison of Malaysian and Australian students. *Proceedings of Xth HERDSA Conference* pp. 276–286.
- Marton, F., & Säljö, R. (1976). On qualitative differences in learning. I. Outcome and process. *British Journal of Educational Psychology*, 46, 4–11.
- Matthews, B. (2004). *Life values and approaches to learning: A study of university students from Confucian heritage cultures*. Flinders University Institute of International Education. Research Collection, Number 12. Adelaide: Shannon Research Press.
- Ng, C.H. and Renshaw, P.D. (2003). Motivation and school learning. In J.P. Keeves (Ed.), *Handbook of educational research in the Asia-Pacific region*. (pp. 495–510). Dordrecht: Kluwer.
- Phan, H.P. & Deo, B. (2007). The revised learning process questionnaire: A validation of a Western model of students' study approaches to the South Pacific context using confirmatory factor analysis. *British Journal of Educational Psychology*, 77(3), 719–739.
- Picou, A., Gatlin-Watts, R., & Packer, J. (1998). A test for learning style differences for the U.S. border population. *Texas Papers in Foreign Language Education*, 3(2), 105–116.
- Säljö, R. (1982). Learning and understanding: A study of differences in constructing meaning from a text. *Acta Universitatis Gothoburgensis: Gothenburg*.
- Shapiro, B. (2004). Developing understanding: Research on science learning and teaching over time. *Canadian Journal of Science, Mathematics, & Technology Education*, 4(1), 1–6.
- Spicer, D.P. (2004). The impact of approaches to learning and cognition on academic performance in business and management. *Education and Training*, 46(4), 194–205.
- Ward, C. and Kennedy, A. (1993). Where is the “culture” in cross-cultural transition? *Journal of Cross-cultural Psychology*, 24(2), 221–249.
- Wilding, J. and Andrews, B. (2006). Life goals, approaches to study and performance in an undergraduate cohort. *British Journal of Educational Psychology*, 76, 171–182.
- Yang Y.F., Tsai CC (2010) Conceptions of and approaches to learning through online peer assessment. *Learning and Instruction*, 20(1) 72–83.
- Zhang Z. (2001). Mediating time: “rice bowl of youth” in fin de siècle urban China. In A. Appadurai (Ed.), *Globalization* (pp. 131–154). Durham: Duke University Press.