Boström, Lena and Coburn, Annette (2013) To be conformative or not - a question of style or education? A Comparative Study of Teacher Students in Sweden and Community Education Students in Scotland, *Scottish Educational Review* 45 (2), 64-77

To be conformative or not - a question of style or education? A Comparative Study of Teacher Students in Sweden and Community Education Students in Scotland

Lena Boström
Mid Sweden University

Annette Coburn
University of the West of Scotland

ABSTRACT

Education systems in Sweden and Scotland are currently undergoing reforms which have shifted curricula from content driven to student focused approaches. In Higher Education, the shift from elite to more accessible mass education may bring direct implications for teaching and learning. Institutions continually seek evidence of the effectiveness of methods used to facilitate student learning and it is important for teachers in Higher Education to be aware of the different ways that students learn. This article examines the learning styles preferences for 70 students in Sweden and Scotland to consider whether, in light of international research on learning styles, these groups differed. Findings were used to explore why and how this might impact on higher education in terms of students´ learning strategies. The findings suggested the need for diverse teaching approaches and concluded that community education students and teacher students differed in their preferences towards sound, design and conformity. The article considers how these differences might be explained and so, might be of interest to those engaged in teaching and learning in Higher Education and those working in discrete professional practice communities.

INTRODUCTION

The changes from elite to mass higher education brings multiple challenges with regard to pedagogy (Kreber, 2007) and involves changing traditional approaches to teaching and assessment practices so '… that not only '"all"' get admitted into our programs but "all" also have a fair chance to succeed' (Kreber, 2007 p.3). While welcomed in improving access to Higher Education this mass education can be one reason why universities feel that students sometimes struggle to cope with their studies and seek to develop efficient and effective study skills and learning strategies in order to balance competing demands of university, family and working life (Ryan, 2010). Students also strive to find individualized educational plans and constructive teaching strategies that work for them in facilitating the successful completion of their degree course. For example, Swedish (Boström, 2011) and Scottish students (Ryan, 2010) are offered a range of coaching and academic support, dedicated to developing study techniques, such as learning strategies, speed reading, note taking. These support mechanisms are intended to enable students to successfully graduate in their specialist fields and to develop capacities that will stay with them beyond their time at university.

Yet, students show a great deal of individual differences in their approaches to learning and so do their teachers. This led us to question how students learn and, if we can demonstrate systematic differences in learning styles, how might these be explained or attributed to differences in teaching styles? Are there advantages to teaching students in the ways they prefer to learn or are there more complex explanations? The utility of matching

teaching methods to learning styles has been widely debated (Redmond, 2010)[1], but when students are presented with learning new and difficult concepts, research shows significant improvement when individual learning styles are matched to instructional strategies (Dunn & Griggs, 2007; Lauridsen 2007). Matching has been shown as effective, both in terms of grades achieved in course assessments and in the meta-cognitive development of students in different fields such as law (Boyle, 2000), engineering (Ingham, 1989) and teacher education (Burke, 2000).

The purpose of this article is to examine differences and similarities in learning styles preferences of students, whose professional interests are in two areas of education: school teacher education in Sweden; and community education in Scotland. This research sought to examine whether the two groups differed from each other. Both groups were drawn from undergraduate degree programmes, leading to a professionally endorsed qualification. The content of learning for each of these student groups included basic pedagogical skills and theoretical understandings on how teaching and learning is developed or created.

The remainder of this paper is structured as follows. First, it provides a short introduction of learning styles according to the Dunn and Dunn Learning Styles Model[2] (Dunn & Griggs, 2007). Next, it reviews previous research that informed the study, before outlining the methods used to generate findings. Finally, findings relating to group differences are reported and the implications of these differences for effective teaching will be discussed.

WHAT IS LEARNING STYLES THEORY?

The topic of "Learning Styles" may refer to more than 70 different published models, often with self-contradictory assumptions about learning, different research and instructional designs, and different starting points (Coffield, et al. 2004; Evans & Waring, 2012). There are many different theories and models of learning styles with varying dimensions and characteristics; different theories focus on different aspects, cognitive processes, personality descriptions, talent, sensory modalities, learning process, thinking styles, etc. (Riding & Rayner, 1998). In general, learning styles theories assume that all may learn, though in different ways and at different levels. The area is comprehensive and addresses both individual and group level, but also impacts on organizations as a whole (Stensmo, 2006).

In Scandinavia, the two most well-known learning styles models are Kolb's Learning Styles Model, which describes the brain process and is frequently used as a starting point in problem-based learning (Hård af Segerstad, et al., 1996) and Dunn´s Model (Boström, 2004b), which is multidimensional and widely-used with children, adolescents and adults. Similarly, in Scotland, Kolb's work is also well-known and used across a range of disciplinary areas as the basis of reflective practice and the creation of experiential learning opportunities (Kolb, 1984). Thinking about learning styles has evolved as part of a wider conversation on learning strategies that encourage deep approaches to learning (Entwistle and Ramsden, 1983; Entwistle, 1993; Marton and Saljö, 1976)

The Dunn and Dunn Learning Styles Model

Dunn's Model is probably one of the most comprehensive, researched, and practiced learning styles theory (Lauridsen, 2007). According to DeBello (1990), there are 11 models that have some or extensive academic research behind them and thus, may be considered more solid than others. In an extensive review de Bello compares these eleven models that are focused on learning strategies. These various models see learning styles from slightly different perspectives and measure or observe using their own methods and terminologies, thus each of the eleven models may differ. Some models are limited to only one variable,

[1] Research on matched versus mis-matched strategies is about everything from team building to difficult and new concepts and to analytical objectives. In this study, discussion is limited to teachers´ methods/learning styles in relation to learners mastering a new and difficult concept.

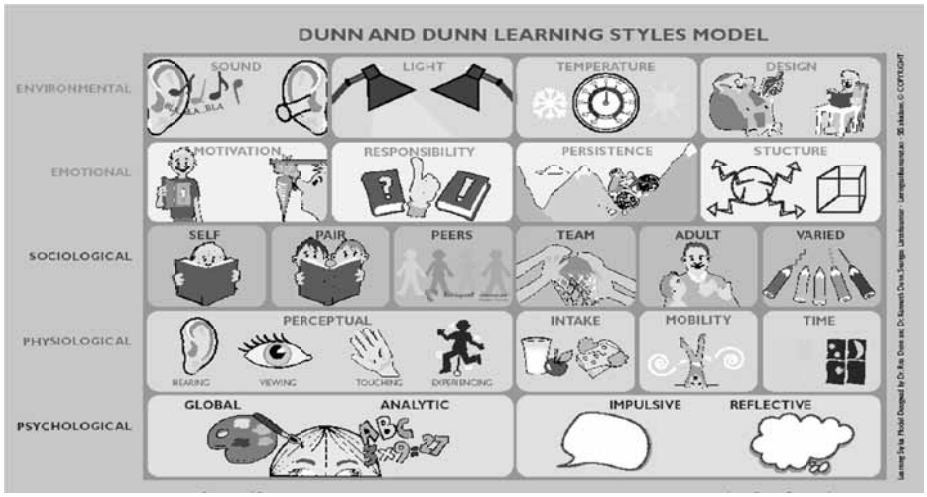
[2] Here after referred to as Dunn´s Model

e.g. cognitive or psychological areas (such as Kolb, 1984), while others are multi-dimensional (Schmeck 1988) covering both cognitive and psychological stimuli together with emotional and sociological factors. Even those who contest learning styles theory (such as Coffield et al., 2004; Furnham, et al., 1999; Evans and Warring, 2012) consider Dunn's model to be one of the ten most widely influential. The model covers several dimensions of learning and teaching and has practical and methodological tools for research, which are unique concerning learning styles research (Lauridsen, 2007; Dunn & Griggs, 2007).

Dunn's Model focuses primarily on the acquisition of new and difficult information. According to Dunn, et al. (1994), an individual's learning style provides insight into the ways by which students begin to concentrate on process, and to internalize and remember concepts. Learning styles comprise both biological and developmental preferences[3] that mean identical instructional environments, methods, and resources are effective for some learners and ineffective for others (Thies, 1999-2000).

Forty years of research, both quantitative and qualitative, has shown that there are different learning style factors (also called elements) that can be measured. These elements are divided into five different areas (stimuli): environmental, emotional, sociological, physiological and psychological stimuli (see Figure 1) which in varying degrees affect every individual.

Figure 1



The Dunn and Dunn Learning Styles Model in a Scandinavian design

These twenty elements have, in international research, revealed a variety of construct validity evidence (Dunn et al. 1995). At the individual level, it is essential to be aware of what affects motivation, concentration, and retention and then to match it in style. This learning-style model is directly applicable on learning situations and should not be in conjunction with psychological models or tests. To build on their strengths and needs of students, therefore, teachers need to be aware of the following:

[3] Preference means that this is an individual's strengths or needs for learning difficulties and new materials. The preference is marked in the assessment (PEPS-test) between 20 - 40 or 60 to 80 (see Appendix 1).

1) Their reactions to immediate instructional environment; sound versus silence, bright versus or soft lighting, warm or cool temperature, and formal versus informal seating;
2) Their own emotionality: motivation (internal or external), persistence (low or varied), conformity (high or low), and structure (internal or external);
3) Their sociological preferences for learning; alone, with a few more colleagues or in a team, with an authority, and/or variation (opposite patterns of routine);
4) Their personal physiological characteristics: perceptual preferences (auditory, visual, kinestetic and tactile strengths), time of day, intake, and mobility needs; and
5) Psychological preferences, information processing (analytic or holistic style), and thinking style.

Most people have preferences, but the patterns of individual style features may be unique. In turn, learning styles are also related to academic performance, gender, age, culture, and processing style.

PREVIOUS RESEARCH

There are more than 900 scientific studies on the Dunn´s Model, of which about around 400 are doctoral dissertation thesis and other scientific articles. Research on the implementation of this model is spread over 130 universities worldwide, such as U.S. (Whitley & Littleton, 2000); Sweden (Boström, 2004b; Calissendorff, 2008), Norway (Buli - Holmgren et al. 2007), Hungary (Honigsfeld, 2001), Brunei (Pengrad - Jadid, 1998), Bermuda (Bascome, 2004), Germany (Hlawaty, 2002) and Russia (Ulubabova, 2003).

Research has examined many different aspects: different types of school, different ages, and different types of participants, teachers, adults, businesses and others. With regard to the settings in which learning style directed teaching is applicable, there are studies ranging from kindergarten to primary and secondary school, adult education, universities, and senior citizen education. Yet, despite these Scottish community education students being introduced in the early stages of the BA Degree in Community Education, there was no empirical evidence on how learning styles preferences were reflected in community education students' experiences of learning, and whether this impacted on the teaching strategies adopted. We also noted that studies focused on whether learning-styles pedagogy has an effect on participants' performance, retention, attitudes, and behaviors in the classroom and study skills but there was minimal agreement on how any of the learning styles theories might coalesce (Zhang & Sternberg, 2005) or indeed in how they might complement or inform other theories on learning.

Learning styles in Higher Education

There are about 60 international studies on Dunn´s Model that apply to higher education. Experimental research with college students has documented significantly higher achievement in a wide range of disciplines, bacteriology, legal writing, marketing, and physics, when learning styles based teaching (matched instructional methods to learning styles preferences) was used in comparison with traditional methods (classroom studies with textbooks, exercises, writing and discussion) (Mangino & Griggs, 2007).

Other studies focused on how learning strategies and study skills can be adapted to the students' learning-styles preferences. For example, research on study techniques that match individual preferences, indicate positive effects in terms of both performance and attitudes when students use individual study advice (Griggs, 1995). Awareness of individual learning styles also seems to affect meta-cognitive skills and the ability of students to utilize personal strategies (Schering, 1999; Hamlin, 2001; Boström, 2004a; Boström & Lassen, 2006). The students seem to have new and deeper perspectives on their own learning potential. Thus, in order to maximize the quality of education, it is important to design in-

service training programmes for students where their preferences are matched. Further, it has been suggested that students who are not doing well in the education system seem to benefit the most from learning styles pedagogy (Raupers, 2007).

There are many studies conducted in the United States about the use of learning styles pedagogy in teacher training education and in-service training for teachers. One concrete example is the teacher education program at St Joseph's College, NY, where courses in different subjects, math methods for example, are taught through the individual´s perceptual preferences (Burke, 2000). Burke suggests it is particularly important to pay attention to emotional elements such as motivation, structure and persistence, and to give each student individual study strategies after taking a learning styles assessment e.g. the PEPS-test. Burke also highlights the need to adjust instructional methods for different groups. This led us to examine learning styles preferences across different student groups, and so to our comparison between Sweden and Scotland.

Whitley & Littleton (2000) suggested integrating learning styles with pedagogy to enhance co-operative learning among students and to raise individual student awareness of their own best options for learning. They also proposed building on student strengths to develop personal learning strategies, which was similar in emphasis to the suggestion that teaching should be planned with pedagogical preference in mind (Dunn and Burke, 2007).

Effects of learning styles strategies on adults in human services (in this case HE learning experiences) have been researched in target groups such as social workers, nurses, case workers and direct-care staff from various perspectives such as perceptual preferences, homework, sociological preferences and matching preferences. Research results suggest that awareness of learning styles preferences and strategies are essential to realize goals to continually learning and assisting others in learning process for human service employee (Hamlin, 2001).

Three comparative studies on learning styles preferences in higher education have been published in Scandinavia (Calissendorff, 2008; Stensmo, 2006; Boström, 2011). Stensmo's (2006) study compared a group of teacher students in practical-aesthetic subjects in terms of perceptual preferences with a normal distribution of teachers' groups. Future teachers in practical-aesthetic subjects seemed to learn more kinesthetically (whole body involved) as compared to other future teacher students.

Boström (2011) compared teacher students to music teachers' students and found statistically significant differences between the two teacher student groups in their choice of more formal designs, routine, and the times of the day when they would prefer to learn. The findings suggested the need for widely diverse teaching approaches in higher education. Concerning learning styles research community education in Scotland there is not much research, so this seems to be an unexplored field.

METHOD AND PURPOSE

This study was designed to compare Swedish teacher students to Scottish community education students to see whether, and if so, how, they differed from each other, and in light of this, what can be done to match the students learning and teaching experiences with their learning styles preferences? A quantitative research methodology was used to conduct the study. The collected data with statistic was coded and analyzed using PC with statistical Package of Social Science (PASW Statistic 18). The following statistical measures were used:

A. *Descriptive statistics;* count percentage; used for describing and summarizing quantitative data
B. *Analytic statistics*: Chi square (x^2) was used to test the association between two qualitative or to detect the difference between two or more proportions. In order to explore group differences, a series of 2 (groups) by 3 (score levels) chi-square tests were computed, along with the Cramer's *V* effect size statistic-

The following hypothesis was generated:

H 1: There will be significant differences in learning-styles preferences comparing teacher students in Sweden to community education students in Scotland.

Participants

Empirical data were collected during the years 2009-2011. There were 70 participants in the study and these were randomly selected from a total population of 460 students from two universities. The population was all students (first and second year) from two degree programmes. The Swedish teacher students were prospective primary school teachers. This study of 70 trainee teachers and community educators included 22 men and 48 women. The division between the two groups consisted of 35 prospective teachers and 35 prospective community educators.

Materials

The Productivity Environmental Preference Survey (PEPS), (Dunn et al. 1984, 1991, 2000) was used to identify participant learning styles preferences. The PEPS analysis consists of 100 items, each with five Likert-type scale points. To reduce response sets, some of the items were reverse-issues. The Likert formats ranged from 1 (definitely disagree) to 5 (absolutely agree). The PEPS can be answered in approximately 25 minutes. Data collected from this assessment yielded computerized profiles of each student's preferred learning-styles traits based on the 20 variables based on Dunn and Dunn elements illustrated in Figure 1. The PEPS has repeatedly evidenced predictive validity (Dunn et al. 1995; Nelson, et al., 1993) and the reliability coefficients for each element typically fall into the .75 to .88 range (Dunn et al., 1995). The Swedish translation of the instrument was utilized. Examples of questions are contained in Table 1. Responses were processed by computer to obtain scores for each individual on each subscale, rescales to have a mean of 50 and a standard deviation of 10. Table 1 gives examples of PEPS items.

Table 1 Examples of PEPS Item

Agree; never/ seldom/ do not know/ often/always

Nr.	**Questions to answers:**	**1** ☹	**2**	**3** 😐	**4**	**5** ☺
1	I prefer working in bright light.	1	2	3	4	5
2	I like to work alone.	1	2	3	4	5
3	It is easy for me to concentrate late at night.	1	2	3	4	5
4	I like to draw or use diagrams when I work.	1	2	3	4	5
5	I often have to be reminded to complete certain tasks or assignments.	1	2	3	4	5
6	The one job I like doing best, I like to do with an expert in the field.	1	2	3	4	5
7	I can think better when lying down than sitting.	1	2	3	4	5
8	I prefer cool temperatures when I need to concentrate.	1	2	3	4	5
9	I like to block out noise or sound when I work.	1	2	3	4	5
10	People keep reminding me to complete my work.	1	2	3	4	5

RESULTS

The hypothesis that there would be significant differences in learning-styles preferences comparing teacher students to community education students was confirmed.

Descriptive data

Table 2 shows the mean scores for each of the learning-styles elements. Most scores fell essentially between 40 and 60, the region of no strong preferences. Students with scores of between 40 and 60 learn without any special accommodations to their learning styles preferences *as long as they are interested in the content*. When *not* interested, they learn superficially and are engaged only in short term memory (Dunn & Griggs, 2007). However, Table 2[4] also shows that large percentages of teacher students and community educators had scores that fell below 40 and above 60 on each of the learning styles elements, indicating that they would benefit from special accommodations to their learning styles preferences.

Table 2 Distribution of Low, Flexible, and High Preference Scores for teacher students and community education students.

ELEMENTS	low		flexible		high				
	Teachers	CE	Teachers	CE	Teachers	CE	Chi-square	Significance a	V
Noise level	0	0	80	94	20	6	3.188	*	0.21
Light	31	29	66	57	3	14	2.92	ns	0.23
Temperature	11	11	71	74	17	14	0.11	ns	0.04
Design	31	11	54	83	17	6	7.84	*	0.36
Motivation	11	14	80	71	9	14	0.78	ns	0.68
Persistence	3	9	71	77	26	14	0.57	ns	0.09
Conformity	14	51	77	43	9	6	10.98	***	0.40
Structure	3	0	37	51	60	49	2.28	ns	0.32
Alone Peres	11	11	43	57	46	31	1.64	ns	0.15
Authority Figure	9	14	66	60	26	26	0.59	ns	0.09
Several Ways	29	23	71	69	0	9	3.24	ns	0.25
Auditory	11	3	49	60	40	37	2.26	ns	0.18
Visual	34	14	63	80	3	6	3.96	ns	0.28
Tactile	17	9	63	60	20	31	1.91	ns	0.16
Kinestetic	3	0	80	74	17	26	1.68	ns	0.16
Intake	14	3	51	51	34	46	3.24	ns	0.22
Time of day	29	31	63	63	4	6	0.25	ns	0.06
Late morning	29	23	60	60	11	17	0,62	ns	0.09
Afternoon	6	0	49	46	46	54	2.28	ns	0.18
Mobility	6	0	74	66	20	34	3.5	ns	0.24

[4] Table 2 illustrates the result of all the elements included in Dunn´s learning styles model.

A review of Table 2 above, and the details provided in Figure 2 and 3, indicates that none of the groups want it to be completely silent and that more teacher students prefer sound compared to community education students. The latter need more light. As for temperature, the distribution is fairly equal. Furthermore, teacher students prefer a more informal setting and community education students more formal design, which was surprising, considering the informal approach to pedagogy taken within community education. Motivation is quite equal for both groups. When it comes to persistence, teachers seem to have a higher degree of this trait. Concerning conformity there is a large difference; the community education students are much more non-conforming compared to teacher students. A majority of the students in both groups have a strong need for structure (50-60%). In the case of sociological preferences, the table shows that the Swedish teacher students are a bit more group-oriented compared to the Scottish community education students. The needs for authority and variety, reveals no major discrepancies.

With regard to the perceptual preferences, the Swedish students seem to be less auditory and visual and the Scottish students more kinestetic and tactile. Regarding the need for snack intake, community education students appear to have a higher percentage level compared to the other population. Time for learning appears not to differ so much. It is evident that across the two groups, most students preferred afternoon as the best time of day for learning. The need for mobility appears to be quite similar between the two groups and there were similar tendencies in strengths and needs.

Figure 2 Percentage distribution of learning styles preferences with high averages

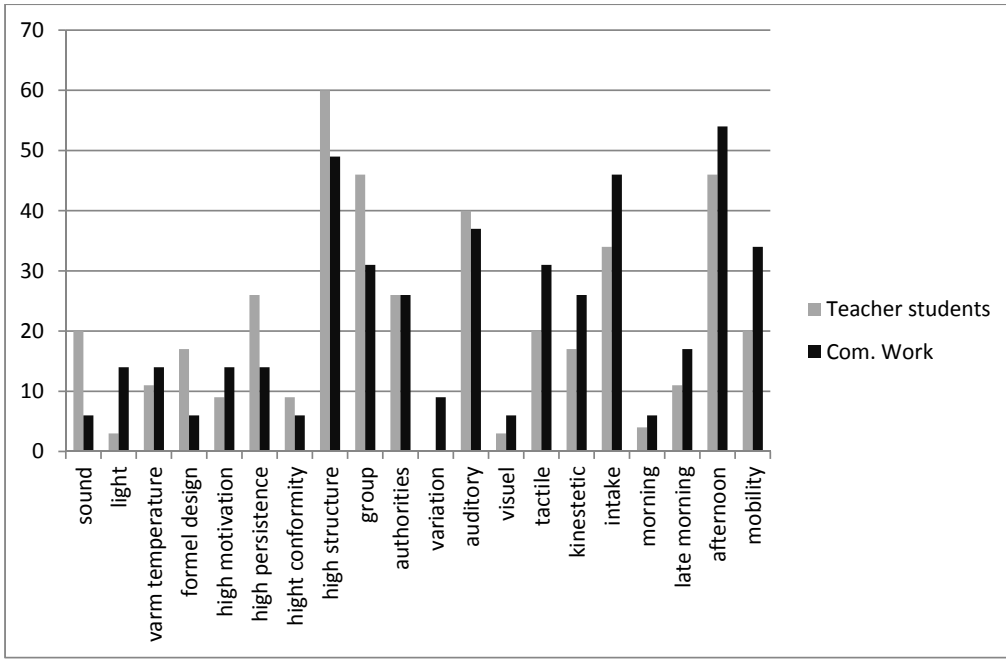
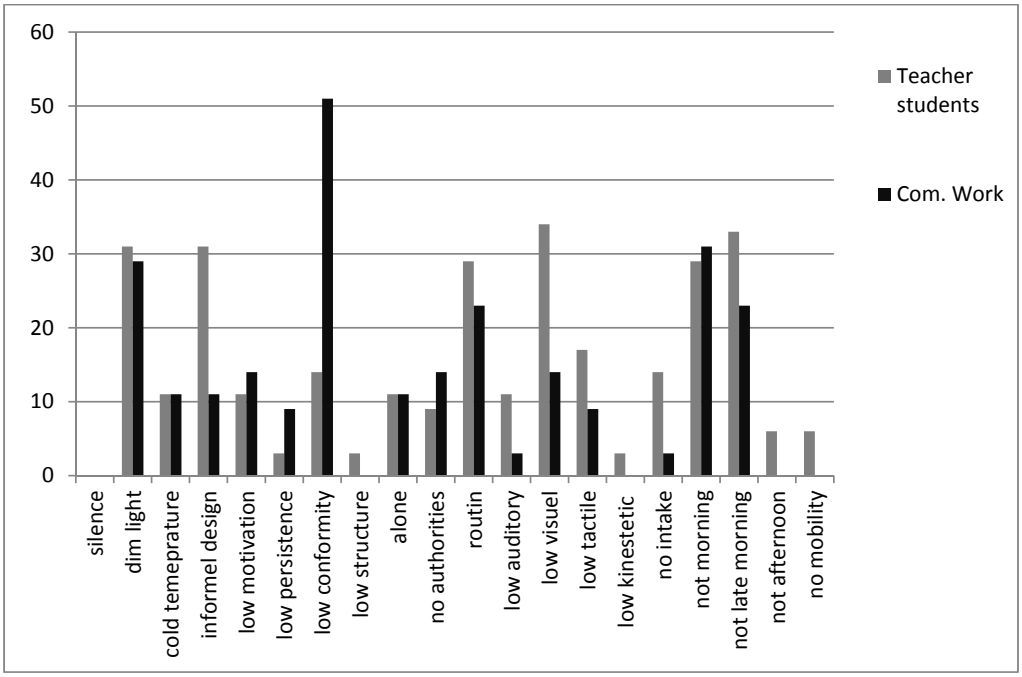


Figure 3 Percentage distribution of learning styles preferences with low averages



Interferial statistics

The applied statistical methods included frequencies report and Chi-Square Test and significance level was set at 0.05 for the analysis of data. Table 2 shows, as mentioned above, distributions of high, flexible, and low preference scores for each of the PEPS subscales for both groups of student teachers. In order to explore group differences, a series of 2 (groups) by 3 (score levels) chi-square tests were computed, along with the Cramer's *V* effect size statistic. A review of Table 2 indicates that three of the PEPS subscales, sound, design, and conformity[5] show statistically significant differences and moderate effect sizes between the two student groups. Thus, teacher students are more likely to prefer sound and informal settings and are more conforming than community education students. If we use a Cramer's *V* values of .30 or better as an indicator of moderate effect size, motivation and structure, although not statistically significant in the present study, might be statistically significant, given a larger sample size and, thus, greater statistical power.

DISCUSSION AND IMPLICATIONS

We acknowledge that we are not comparing like with like degree programmes. Yet, we felt there was a shared interest across both student cohorts in that they each focus on developing effective strategies for education, and for understanding the metacognitive process of learning. The results illustrated that teacher students differ from community education students at two universities in Sweden and Scotland in their learning style preferences, with observed significant differences specifically in the areas of sound, design,

[5] Conformity refers to tendencies to follow or not follow other people's guidelines. Conforming students adapt to given directives and frameworks. They work as the teacher expects. Non-conforming students works best when they get possibilities to choose strategies. They like to do things their way and resist directions from others, unless they personally have requested it (Minotti, 2007).

and conformity. No previous study has been conducted to compare teacher students with community education students. This result should therefore be seen as a new and unexplored field of research.

In a recap of international studies on different populations it should be noted that there are often differences between various groups, but the individual variations are greater, (Dunn & Griggs, 2007). With regard to the two studied populations the following are noted: it will not compare the two student groups with similar international research, since such studies are not available; the study confirmed that student groups with different orientations appeared to have distinctive preferences (Stensmo, 2006).

Concerning the feature of sound and design, this study showed that teacher students compared to community education students prefer sound and informal design when learning new and difficult information. In this case, it may be suggested that the teacher students have their future careers in mind. Their awareness of the importance of environmental preferences, for them and for the children they are going to teach, might make them more aware of this than the Scottish community education students. However, we feel that this reason is not a satisfactory explanation of why teacher education students appeared to prefer sound and informal design. Community education is intrinsically informal in its design, with learning often developed through conversations in cafes or in community based learning facilities. Thus, perhaps the question of informality appears not to register with community education students for some other reason?

The third style feature which distinguished the groups was conformity. Teacher students are much more conforming compared to the other group. This comparison led us to consider the dispositions of students in Higher Education who participate in professionally endorsed courses that help to prepare them for professional careers in for example, school and community education. We wondered whether explanations of the differences in relation to sound, design and conformity were in any way linked to the professional practices that the students sought to join on graduation. Thus, it appeared that thinking about and understanding learning styles offers a useful starting point for planning and development of teaching and learning strategies, although this is only one part of a configuration of elements which are used to create and develop learning.

The teacher education examined in this study relies on different pedagogical perspectives and methods that engage students in different learning theories such as cognitive, constructivist and socio-cultural (Mid Sweden University, 2011). This education is profiled against the theme of teacher as leader. Leadership in school permeates a range of skills in teacher education, including discussions of school organization and school leaders' role, the elements dealing with social psychological processes and choice of working in the classroom. Successful work in school therefore requires both that individual teachers' special abilities are recognized and appreciated, and that efforts be made to allow teachers to learn from each other's leadership styles. Teachers oriented towards a task-oriented leadership, which is good at conveying traditional subject knowledge, develop their abilities to meet socially oriented goals and become better at creating a classroom climate that promotes students' self-knowledge acquisition, as well as vice versa (Berg, 2011).

In Scotland, Community Education, a term initially coined to bring Youth and Community Work and Adult Education into alignment (Tett, 2010), was developed through informal and critical approaches that could be used to counter a qualifications driven agenda set by more formal education. Community Education is suggested as a problem-posing critical pedagogy with a democratic social purpose (Coburn, 2010; Martin, 2007; Wallace, 2008). As such, the benchmark statements for development of HE degrees (QAA, 2009) incorporate clear guidance that students will be expected to learn and create strategies that should equip them with the understanding, skills and attributes needed to challenge inherent power relations that maintain the status quo. In this sense, like all forms of education, community education is not value free, and its particular value base may explain this high level of non-conformity.

Educational Implications

The study showed differences in the preferences of learning of two student groups in Sweden and Scotland, which could be useful when considering similar practices in education in other countries. Students in teacher education differ from students in community education subjects. These differences should be taken into account when planning, teaching and examining courses where different student groups take part, for example in shared areas of curriculum. A variation in teaching, learning and assessment is therefore required to meet student learning needs.

The implications of this study relate to a) teaching strategies, b) prospective teachers and community educators understanding of their own style and how these affect their leadership of learning, and c) understanding of the learning styles of participants and students.

For student groups to meet different needs, the insights provided by learning styles preferences of both lecturers and their students, may be useful in promoting diversity in teaching, learning and assessment. Conclusions to draw from this study for both populations are their high need for structure. Many students enrolled in these particular programmes in the two universities (60-70%) learn better when they have frameworks, assumptions, plans, and practices on how they should learn difficult and new knowledge.

Another important conclusion from this and other studies (Boström, 2004b, Calissendorff, 2008, Schering, 1999) is the implication that knowledge of human diversity affects learning in a deeper level in the development of meta-cognitive skills. Students can better understand both their own learning and others (Burke, 2000) and can find individual study strategies more easily, therefore do better in their studies. With learning-styles preferences as a pedagogical platform, both for groups and individuals, teachers become aware of their own differences and those of students. This could bring additional tools for practices in response to the twenty-first century's challenge for university education to be more widely available to all and where non-traditional students have the opportunity and a fair chance to succeed (Kreber, 2007).

CONCLUSION

An understanding that learning styles preferences may combine with particular practice dispositions to maximize student learning experience can be used to enhance graduate capacity for teaching and learning in future. It is important for prospective teachers and community educators to become aware of how they learn and how they will apply this learning within professional practice.

While further research studies, involving larger samples, will be needed to see if, and why these groups differ, this research has been interesting in formulating some key questions around learning styles theory and how this fits within a wider discourse on learning approaches. It has been useful to compare the responses of students in Scotland and Sweden, to see where pedagogies appear to coalesce in working with students who will be educators themselves in future. It was also interesting to see differences in conformity, and to begin to explain why this might be the case. The findings were inconclusive in discovering whether the difference in levels of conformity was due to the learning styles, strategies and capacities that students brought with them to their courses, or if they were influenced by the professional community of practice (Wenger, 1998) that they sought to join on graduation (either as teachers or community educators). This research leaves us with more questions than answers. In particular we are interested in the extent to which learning styles preferences may be part of a wider puzzle about learning approaches, values and principles.

REFERENCES

Bascome, E.G. (2004). *Effects of learning styles instructional resources on a short- and log-term vocabulary retention and attitudes of seventh grade language arts students*. (Doctoral dissertation, St John´s University, New York).

Berg, G. (2011). Klassrums- och skolorienterat ledarskap. In Berg, G., Sundh, F. & Wede, C. *Lärares ledarskap i och utanför klassrummet.*177 -190. Lund: Studentlitteratur.

Boström, L. (2004a). Lärande och strategier, *Didacta Varia,* 9 (2), 73–81.

Boström, L. (2004b). *Lärande & Metod. Lärstilsanpassad undervisning jämfört med traditio-nell undervisning i svensk grammatik*. (Doctoral dissertation, School of Education & Communication, Jönköping University & Helsinki University).

Boström, L (2011**).** How do Teacher Students for Compulsory School Learn Compared to Music Teacher Students in Sweden? A Comparative Study of Two Different Student Teacher Groups in Sweden, *The Quality of Higher Education. Volume 8 (2011), 158-179.*

Boström, L. & Lassen, L. M. (2006). Unraveling learning, learning styles, learning strategies and meta-cognition, In *Education + Training,* Vol. 48 No. 2/3, 2006, 178-189.

Boyle, R.A. (2000). Bringing learning-styles instructional strategies to law school: You be the judge! ,In R. Dunn & S.A. Griggs (Eds.), *Practical approaches to using learning styles in higher education*, 155-165. Westport, CT: Bergin & Garvey.

Buli-Holmgren, J., Guldahl, T. & Jensen, R. (2007). *Refleksioner om opplæring - i et læringsstilsperspektiv*. Oslo: Cappelen Damm.

Burke, K. (2000). A Paradigm Shift: Learning-Styles Implementation and Preservice Teachers, In R. Dunn & S. Griggs, (Eds.) Practical Approaches to Using Learning Styles in Higher Education, 85-94. *Practical approaches to using Learning Style in higher education.* Westport, CT: Bergin & Garvey.

Calissendorff, M. (2008). *Det är viktigt att känna att man duger!* Resultat från enkät- och intervjuundersökning om SMI-studenter och lärstilar. Rapport, Stockholms Musikpedagogiska Institut (SMI).

Coburn, A. (2010).Youth Work as Border Pedagogy. In Batsleer and Davies (eds) *What is Youth Work?,* 33-46. Exeter: Learning Matters.

Coffield, F., Ecclestone, K., Faraday, S., Hall, E. et al. (2004). *Learning styles and pedagogy. A systematic and critical review.* Learning & Skills research centre. www.lsrc.ac.uk

DeBello, T. (1990). Comparison of eleven major Learning Style models; Variables, appropriate population, validity of instrumentations and the research behind them, *Journal of Reading, Writing and Learning Disabilities International. 6* (3), 203-222. New York: Hemisphere.

Dunn, R. & Burke, K. (2007). Higher Education and Teachers Certification Programs: Needed Ethical Changes, *The Journal of Higher Education Management, 22.* 9-19.

Dunn, R. & Griggs, S. A. (2007). *Synthesis of the Dunn and Dunn Learning Style Model: Who, What, When, Where, and So What?* NY: St. John's University, Center for the Study of Learning and Teaching Styles.

Dunn, R., Dunn, K., & Perrin, J. (1994). *Teaching young children through their individual learning style*. Boston, MA: Allyn & Bacon.

Dunn, R., Dunn, K. & Price, G.E. (1984, 1991, 2000). *Productivity Environmental Preference Survey*. Lawrence, KS: Price System.

Dunn, R., Griggs, S.A., Olson, J., Gorman, B. Et al. (1995). A meta analytic validation of the Dunn and Dunn Learning Style model, *Journal of Educational Research.* 88(6), 353-364.

Entwistle, N.J. & Ramsden, P. (1983). *Understanding Student Learning.* London: Croom Helm

Entwistle, N. (1993).*Teaching and the Quality of Learning*, Report of a seminar held on 25 November, London: Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom and Society for Research into Higher Education.

Evans, C. & Waring, M. (2012). Application of styles in educational instruction and assessment. In L. F. Zhang, R. J. Sternberg, and S. Rayner (Eds.) *The Handbook of Intellectual* Styles, 297-330. New York: Springer.

Finucane, P. M., Johnson, S. M., & Prideaux, D. J. (1998). Problem based learning: Its rationale and efficacy, *Medical Journal of Australia,* 168, 445-448.

Freire, P. (1996) *Pedagogy of the Oppressed* (M.B.Ramos, Trans. 2nd Edition), London: Penguin

Furnham, A., Jackson, C. & Miller, T. (1999). Personality, learning style and work performance, *Personality and Individual differences*, 27, 1113-1122.

Griggs, S. A. (1995). *Learning Style Counselling.* Greensboro, NC: ERIC/CASS.

Hamlin, (2001). *Effect of Learning-style strategies and meta-cognition on adults´ achievement*. NY: (Doctoral dissertation, St John´s University, New York).

Hlawaty, H. (2002). *Comparative analysis of the learning styles of German versus other adolescents from diverse nations by age, gender, and academic achievement level.* (Doctoral dissertation, St John´s University, New York).

Honigsfeld, A. (2001). *A comparative analysis of the learning styles adolescents from diverse nations by age, gender, and academic achievement level*. (Doctoral dissertation, St John´s University, New York).

Hård af Segerstad, H., Klasson, A., & Tebelius, U. (1996). *Vuxenpedagogik - att iscensätta vuxnas lärande*. Lund: Studentlitteratur

Ingham, J. (1989). *An experimental investigation of the relationships among learning style perceptual preference, instructional strategies, training achievement, and attitudes of corporate employees*. (Doctoral dissertation, St. John´s University, New York).

Kolb, D. (1984) *Experiential Learning: Experience as the source of learning and development* New York : Prentice Hall

Kreber, C. (2007). What´s it really all about? The Scholarship of Teaching and Learning as an Authentic Practice, *International Journal for the Scholarship of Teaching and Learning*. Vol 1. No 1 (January, 2007), 1-4.

Lauridsen, Ole (2007). *Fokus på læring: om læringsstile i dagligdagen professionelt og privat*. Köpenhamn: Akademisk forlag.

Mangino, C. & Griggs, S.A. (2007).Learning Styles in Higher Education, In Dunn, & Griggs, (Eds). *Synthesis of the Dunn and Dunn Learning Style model: Who, what, when, where, and so what?,*185-188. NY: St. John's University, Center for the Study of Learning and Teaching Styles.

Martin, I. (2007). Reclaiming social purpose – framing the discussion in *The Edinburgh Papers* Edinburgh: Edinburgh University

Marton, F. and Saljo, R. (1976). On Qualitative Differences in Learning: I. Outcome and process, *British Journal of Educational Psychology,* 46**,** 4-11.

Mid Sweden University (2011). *Ansökan om examenstillstånd för Grundlärarexamen med inriktning emot arbete I grundskolans årskurs 4 -6*.

Minotti, J.M. (2007). Research on Emotional Elements: Motivation, Persistence, Responsibility, and Structure, In R. Dunn & S. Griggs, (Eds). *Synthesis of the Dunn and Dunn Learning Style model: Who, what, when, where, and so what*?, 15-18. NY: St John's University, Center for the Study of Learning and Teaching Styles

Nelson, B., Dunn, R., Griggs, S. A., Primavera, L. et al. (1993). Effects of Learning Style intervention on college student's retention and achievement, *Journal of College Student Development*. 34 (5), 364-369.

Pengrad – Jadid, P.R. (1998). *Analysis of learning styles, gender, and creativity of Bruneian performing and non-performing primary and elite and regular secondary school students and their teachers´ teaching styles.* (Doctoral dissertation, St John´s University, New York).

QAA (2009). *Subject benchmark statements: Youth And Community Work.* The Quality Assurance Agency for Higher Education. Gloucester:QAA

Raupers, P. (2007). Research on Perceptual Strengths: I See What You Mean; I Hear What You Say; Are You Staying In Touch? Are You Moving My Way?, In R. Dunn & S. Griggs, (Eds). *Synthesis of the Dunn and Dunn Learning Style model: Who, what, when, where, and so what*?, 23-26. NY: St John's University, Center for the Study of Learning and Teaching Styles

Redmond, J.A. (2010). *The Matching, Mismatching Hypotheses, Mixed Match and Style*. Paper presented at the Education, Learning Styles, Individual Differences Network (ELSIN) conference, 29 June 2010.

Riding, R. & Rayner, S. (1998). *Cognitive styles and learning strategies. Understanding style differences in learning and behavior.* London: David Fulton.

Ryan, A. (2010) 'Part-time study, Full-time commitment: how adult learners perceive their experiences as learners in the first year of their learning journeys', In Merrill, B. and Monteagudo, J.G. (2010) *Educational Journeys and Changing Lives.* Seville, University of Seville, University of Warwick, ESREA

Savin-Baden, M. (2000). *Problem-based Learning in Higher Education: Untold Stories*. Buckingham, Open University Press

Schering, M (1999). *The effects of learning-style instructional resources on fifth-grade suburban students´ meta-cognition, achievement, attitudes, and ability to teach themselves* . NY: (Doctoral dissertation, St John´s University, New York).

Schmeck, R.R. (1988). An introduction to strategies and styles of learning, In R.R. Schmeck (Eds.), *Learning strategies and Learning Style*, 3-20. New York: Plenum Press.

Stensmo, C (2006). *Perceptual preferences in learning among teacher education students in practical-aestethical subjects.* Paper presented at Nordisk Förening för Pedagogisk Forskning (NFPF) conference 9-11 March in Örebro, Sweden

Tett, L. (2010). *Community Learning and Development (Third Edition)* Edinburgh: Dunedin

Thies, A. P. (1999-2000). The neuropsychology of learning styles, *National Forum for Applied Educational Research Journal, 13*(1), 50-62.

Ulubabova, T. (2003). *Comparative analysis of the learning styles adolescents of Russian versus other adolescents from diverse nations by age, gender, and academic achievement level*. (Doctoral dissertation, St John´s University, New York).

Wallace, D. (2008). Community Education and Community Learning and Development, In T. Bryce, and W. Humes, (Eds) *Scottish Education, Third edition: Beyond Devolution*, 742–751. Edinburgh: Edinburgh University Press.

Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity,* Cambridge: Cambridge University Press

Whitley, J. & Littleton, P. (2000). One Texas University´s Approach to Integrating Learning Styles in Teacher Education: Talking the Talk and Walking the Walk, In R. Dunn & S. Griggs, (Eds). Practical Approaches to Using Learning Styles in Higher Education, 85-94). *Practical approaches to using Learning Styles in Higher Education.* Westport, CT: Bergin & Garvey.

Zhang, L.F. & Sternberg, R. J. (2005). A threeefold model of intellectual styles, *Education Psychology Review*, 17 (1), 1-53.

Productivity Environmental Preference Survey

Individual Profile

Name: **Sex:** Female **Date of Printing:** 2010-05-02

Year of Birth: <<< **Identification:** TY

Preference Summary

Scale	Score	20 30 40 50 60 70 80		
1	50	Prefers Quiet	NOISE LEVEL	Prefers Sound
2	46	Prefers Dim	* LIGHT	Prefers Bright
3	43	Prefers Cool	* TEMPERATURE	Prefers Warm
4	43	Prefers Informal	* DESIGN	Prefers Formal
5	31	Low	MOTIVATION	High
6	50	Low	PERSISTENT	High
7	44	Low	RESPONSIBLE(CONFORMING)	High
8	57	Does Not Like	STRUCTURE *	High
9	72	Prefers Alone	ALONE/PEERS	Prefers With Peers
10	50	Does Not Want Present	AUTHORITY FIGURES	Wants Present
11	30	Does Not Learn In	SEVERAL WAYS	Prefers Variety
12	67	Does Not Prefer	AUDITORY	* Prefers
13	38	Does Not Prefer *	VISUAL	Prefers
14	35	Does Not Prefer *	TACTILE	Prefers
15	50	Does Not Prefer	KINESTHETIC	Prefers
16	45	Does Not Prefer	* INTAKE	Prefers
17	55	Prefers Evening	TIME OF DAY *	Prefers Morning
18	55	Does Not Prefer	LATE MORNING	Prefers
19	53	Does Not Prefer	AFTERNOON	Prefers
20	51	Does Not Prefer	NEEDS MOBILITY	Prefers