Assessment of individual learning style preferences with respect to the key language competences

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Abstract

The paper focuses on the assessment of individual learning style preferences of students of two different disciplines, Management of Tourism and Applied Informatics, at Faculty of Informatics and Management, University of Hradec Kralove. The Felder-Silverman learning styles inventory was administered to students in Professional English language course in the Blackboard learn environment to monitor and check students’ proficiency of key language competences. Descriptive statistics identified that students do vary in their preference for particular learning style with a great variety of learning style preferences distributed among the sample groups of students. A large number of the students showed mild preference to Active, Visual and Sequential learning styles. On the other hand, there is a large group of students displaying a strong preference to Sensing learning style dimension. The key language competences defined by the Common European Framework of Reference for Languages (CEFR) are tested in the computer-based environment with a special view on students’ individual learning styles.

1. Introduction

It is well accepted that when teachers are able to analyse their own teaching techniques and analyse the difference and needs of their students, the educational process is likely to become optimised for both students and...
teachers (Fairhurst & Fairhurst, 1995). A lot of education scientists have been talking about “changing education paradigm” (Robinson, 2011) recently, pointing out that the power of technology has caused fundamental changes in all aspects of our lives, including education process. We should know more about how students perceive and distribute information, which is closely connected for instance with terms like divergent thinking or “active learning” (Beránek and Remes, 2012). To reflect the upcoming changes is important as the need to modify the standardised one dimension type of learning and teaching has been growing. By all means, we are living in the most intensely stimulating period.

Respecting the changes in learning and teaching environment and in the attempt to raise education standards, we have decided to implement the theory of learning styles into our e-courses of Professional English language in Blackboard learning environment (BB) at the Department of Applied Linguistics, Faculty of Informatics and Management, University of Hradec Králové.

Learning style is one of the concepts that are postulated by researchers to depict learners’ differences and varied needs. The ways that people go about collecting, interpreting and proceeding information can be surprisingly different. Worldwide research shows that people do have different preferences sometimes referred to as learning styles and are used to describe and help us (teachers) understand the ways in which different students learn. Therefore, the present study aims to depict learning style difference among a sample group of students of Faculty of Informatics and Management with a special respect to teaching and assessing key language competences. The Felder–Silverman model of learning style preferences has been administered as it is based on Dr. Silverman’s expertise in educational psychology and professor Felder’s personal experience in technical (engineering) education.

Research questions:
1. How do English as foreign language students in the Faculty of Informatics and Management vary in their preference for particular learning styles?
2. How can be the knowledge of students’ LS preferences used in relation to teaching and assessing key language competences?

2. Methodology

2.1. Learning style theory and definition of Felder-Silverman model of LS

Over the years, a number of different learning styles theories have emerged. Most learning style theories focus heavily on the ability to think. The problem is that majority of these models have been based on responses to questionnaires, and since this approach relies on people’s willingness and ability to be accurate and objective about the ways that they learn, the validity of learning styles theory has often been questioned. A number of influential writers (including Kolb, Honey and Mumford) have argued recently that learning styles are not determined by inherited characteristics, but develop through experience. Styles are, therefore, not necessarily fixed and can change over time, even from one situation to the next. Bloomer and Hodkinson (2000) argue that learning styles are not a major determinant of how people learn and that the effects of contextual, cultural and relational issues are much greater. Suzuki and Restak also promote the possibility that the brain has the ability to change (plasticity) and transform itself based on experience. If this is true, then it is possible that learning styles can also change and transform themselves based on experience. The other major criticism of learning styles is that it is labeling students. This labeling may actually be harmful.

Although the value of learning styles theory has been questioned in recent years, this has been due largely to the lack of scientific research to support the various models. Recent work by Cheminais (2002), Reid (2005) and Burnett (2005) identifies learning style as an important idea for inclusive learning and teaching. Even those educationalists who question the validity of learning styles as a concept, agree that “there is a benefit in enabling learners to reflect on how they learn best and this is an important aspect of developing metacognition in young people.” (DEMONS, 2005) Some writers conclude that fostering metacognition is perhaps the most important advantage that can be claimed for applying learning styles theory to learning and teaching. Metacognition is something we do on a moment-to-moment basis, according to Dr Steve Fleming, New York University. "We reflect on our thoughts, feelings, judgements and decisions, assessing their accuracy and validity all day long," (Fleming, 2010)
The idea of learning styles usually refers to a preferred way of learning. It implies that each individual has a natural inclination toward learning of some kind and, that if that preference can be identified, teaching and learning experiences can be provided to learn more effectively. Professor Felder states that “the ways in which an individual characteristically acquires, retains, and retrieves information are collectively termed the individual’s learning style” (Felder, 2012).

2.2. Classification of preferences of LS dimensions

The author is focusing on professor Felder’s model of learning styles preferences, as this model has been used in the Faculty of Informatics and Management. Felder’s model describes five dichotomous learning style dimensions, which indicate the students’ preferences for certain poles of the dimensions. (see Fig.1) In this model five basic questions are followed: 1) What type of information is preferentially perceived: sensory—sights, or intuitive—memories? 2. Through which modality is sensory information most effectively perceived: visual—pictures, or verbal—written and spoken words? 3. How is the information processed: actively—through physical activity or discussion, or reflectively—through introspection? 4. How is understanding progressed: sequentially—in logical steps, or globally—in large jumps, holistically? 5. With which organization of information is the student most comfortable: inductive—facts and observations, or deductive—principles are given, consequences and applications are deduced? The last named dimension is not assessed in ILS because as Felder states it “…the "best" method of teaching is inductive, whether it be called problem-based learning, discovery learning, inquiry learning, or some variation on the same theme.”(Felder, 2012)

![Fig. 1: Learning style dimensions](image)

2.3. Research methods – Index of Learning Styles (ILS)

The participants in this study were 132 first-year university students enrolled at Faculty of Informatics and Management, University of Hradec Kralove. Most students were 19 or 20 years of age. The students majored in two disciplines including Applied Informatics (n=82), and Management of Tourism (n=50). Among the participants, 52 were males and 80 were females. The study was conducted during the first and second semesters of their first academic year.
The instrument used in this study to assess students’ learning style preference was the Index of Learning Styles questionnaire (ILS) developed by Felder and Soloman (Felder & Soloman, nd). The ILS is a self-scoring web-based instrument consisting of forty-four multiple choice questions that reflect the psychological and behavioural characteristics of four dichotomous dimensions of LS. Questions in this questionnaire are written in English and the two choices in each question reflect the two dichotomous learning styles. For example, in the question “When I am learning something new, it helps me to (A) talk about it, (B) to think about it”, this question is trying to distinguish whether the student is more an active learner or a reflective learner. Students indicate their preference to either of these two answers depending on their normal practice. After submitting their answers, students are provided with Learning Style Results, (see Fig. 2) where if their score on the scale is 1-3, they are considered fairly well balanced on the two dimensions of that scale. If their score on the scale is 5-7, they have a moderate preference for one dimension of the scale and will learn more easily in a teaching environment which favours that dimension and if their score on a scale is 9-11, they have a very strong preference for one dimension of the scale and are classified as purely single style learners, which may cause struggling and suffering when learning in an environment which does not support their preference. The ILS was installed in Blackboard Professional English language on-line courses and it took students an average of around 40 minutes to complete it.

![Learning Styles Results](image)

**Fig. 2: Learning Style Results**

### 3. Results

In this chapter the individual ILS of our students is assessed, following one of the two main research questions: How do English as foreign language students in the Faculty of Informatics and Management vary in their preference for particular learning styles?

Figure 3 and Figure 4 indicate that the students do vary in their preference for particular learning styles. A large number of students share preference to Sensing dimension of learning style (109 students – 83%) and Visual dimension of learning style (107 students – 81%), there are, however, considerably large groups of students displaying preference to Active (78 students – 59%) and Sequential (77 students – 58%) dimensions of learning style (LS).
Figure 5 shows that the percentages of students displaying mild preference to the four groups of dichotomous learning style dimensions, were 65 per cent (38% to Active LS, 27% to Reflective LS) for Active-Reflective learners, 39 per cent (30% to Sensing LS, 9% to Intuitive LS) for Sensing-Intuitive learners, 53 per cent (39% to Visual LS, 14% to Verbal LS) for Visual-Verbal learners and 65 per cent (37% to Sequential LS, 28% to Global LS) for Sequential-Global learners. Among the students with mild preference to the learning styles, considerably large number of them (39%) displayed mild preference to Visual learning style, Active learning style (38 %) and to Sequential learning style (37%).

In Figure 6, moderate preferences to the four groups of learning style dimensions were 27 per cent (16% to Active LS, 11% to Reflective LS) for Active-Reflective learners, 43 per cent (36% to Sensing LS, 7% to Intuitive LS) for Sensing-Intuitive learners, 34 per cent (29% to Visual LS, 5% to Verbal LS) for Visual-Verbal learners and 28 per cent (20% to Sequential LS,8% to Global LS) for Sequential-Global learners.
Figure 7 shows the percentages of students displaying strong preference to the four groups of dichotomous learning style dimensions as 8 per cent (3% to Active LS, 5% to Reflective LS) for Active-Reflective learners, 17 per cent (16% to Sensing LS, 1% to Intuitive LS) for Sensing-Intuitive learners, 14 per cent (13% Visual LS, 1% Verbal LS) for Visual-Verbal learners and 4 per cent (2% Sequential, 2% Global) for Sequential-Global learners.

As is indicated by the above figures 5-7, mild preference percentages to the four dimensions of learning styles represent the majority of students. There are, however, moderate and strong preferences especially to Sensing dimension of LS.

Each learning style is special but at the same time, each learning style has its strengths and weaknesses. This means that in order to prepare our students adequately, we must help them to adjust and work in styles that may not be their most comfortable. There are 16 (2^4) learning styles in the proposed framework and it would be very difficult to accommodate 16 diverse LS in the Professional English language course. However, we must be aware of the fact that “the point is not to place all students into one or another style category and to teach each student exclusively according to his or her preferred style… it would not be desirable, for reasons to be discussed. Rather, the goal is a balanced teaching style, in all classes at all levels.” (Felder, 2005)
4. Key language competences and LS preferences

4.1 Definition of key language competences

In relation to assessing language competences we distinguish two major categories – "macro-skills" involving productive skills (speaking, writing) and receptive skills (listening, reading) and "micro-skills", e.g. grammar, vocabulary, pronunciation and spelling, which cross-cut the four major language competences. (see Figure 8).

Alongside with these skills, a lot of classroom progress testing and activities focuses on grammar and vocabulary. Unfortunately, a lot of tests, which concentrate on these areas exclusively and ignore assessment of the four major language skills, give students wrong message that their overall progress in language performance is good. (Douglas, 2010)

When assessing receptive skills (reading, listening) the key element is authenticity which means that the oral and written texts are taken from real sources (TV and radio shows, news, advertisements, newspapers and magazines, social network, etc.). The main objective of assessing reading and listening is to check whether students are prepared to function successfully in real-life reading and listening situations (instructions, interviews, conversations, etc.). A lot of teaching methods – techniques used in assessing reading can be adapted to assess listening as well, although cognitive demand has to be taken in account.

The assessment of productive language skills (writing, speaking) is very difficult as it involves the ability of student to interact in foreign (English) language in written or spoken form and comprehension as well as production is required. Selecting appropriate testing formats is crucial. Ideally the tasks involve integrated (combined) and independent skills (read, listen and then speak in response to a question; listen and then speak in response to a question; read, listen and then write in response to a question).

Micro-skills - The language skills of listening, reading, writing, and speaking are distinct from one another. Although testing one language skill individually may provide indirect information about a test taker’s ability to perform the others, it cannot provide a comprehensive assessment of one’s overall communicative ability, which frequently involves the use of multiple language skills in combination with each other. (Powers, 2010)
3.1. Implications

Greater awareness of learning preferences and styles can help lecturers to be more flexible in their teaching and to utilise a wider range of classroom methodologies, modifying instructions in both, present and on-line courses of Professional English language. (Milkova, 2011) The aim is to optimize if not maximize the amount of taught material in learning environment, involving variability and creativity when exercising and assessing the key language competences. The intention is not to match teaching style of key language competences to learner preferences, but to help students build their skills and capacities to learn well in both preferred and less preferred modes of learning. Based on the results of FIMINO ESF project (see Figure 9), conducted at Faculty of Informatics (number of students involved 906) within the years 2011-2013 we can clearly see that visual and verbal materials are appreciated by the students more than any others, which means that balanced approach is generally preferred.

4. Conclusion

To conclude, a better understanding for English as a Foreign Language learning and teaching is that different students need different things. Teachers can tolerate differences and match their teaching to their students’ learning styles by explaining and presenting things – in our case key language competences, in different ways, using alternative teaching aids and techniques and tailoring the activities that they provide to suit their students’ learning styles. The key language competences assessment and teaching, especially the productive ones, is difficult as it involves the ability of student to interact in foreign (English) language in written or spoken form and comprehension as well as production is required. Selecting appropriate testing formats and teaching methodology is crucial. Helping students to identify the ways that they learn best and providing them with opportunities to use all their senses and different intelligences is one of our key challenges.

5. References


