ADVANCES IN HIGHER EDUCATION

learning by sharing: strengthen the links between higher education, applied research and practice

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EDITORIAL

Welcome to the newest edition of Advances in Higher Education providing selected papers which contribute the newest research in Higher Education of Business, Languages, Tourism, and Entrepreneurship. It has been my delight to review papers for this edition and, as always, these papers are written by authors who are working directly with students and they offer their hard work to help us all become better educators.

Christine Daley’s research is born from a passion for professional students who, despite having high intelligence and valuable work experience do not engage with formative assessment work as well as those students on the same course who have come through undergraduate training. Using a phenomenology methodology Christine has been able to carry out ground-breaking work in unpacking the experiences of these professional students to find out what is holding them back. This research paper is a real boost to understanding professional learners and planning culturally based and initiative based responses.

Helen Thompson’s insightful and timely research paper is on an important topic that we ignore at our peril. Internationalisation is something that all universities would like to achieve and the intercultural benefits of this to international students are well publicised. However, what about intercultural benefits to the domestic students? Is this just assumed? Phenomenography was used for this research to understand the different perceptions of domestic students which make very interesting, informative and perhaps a little worrying reading.

Aleksandra Peciuriene’s research paper provides a helpful theoretical base to learning and puts together models of learning in an integrative manner. Her research purpose was born from a desire to increase learners’ awareness of how they learn. She challenges us to consider how we can enable students to develop ‘adaptive flexibility’ in their preferred learning approach and to what extent experiential learning is helpful within the accounting curricula in particular.

An applied entrepreneurship training model from Denmark is implemented in Finland. The “Entrepreneurial Path to Working Life – EntreEtelä-Savo” Project, enabling this case study research for Mikhail Nemilentsev and Marja-Liisa Kakkonen provided Finnish citizens and educated immigrants with entrepreneurial competencies, entrepreneurship enablement and a superb opportunity for immigrants to integrate into Finnish society.

Marja-Liisa Kakkonen and Mikhail Nemilentsev’s research interrogated the impact of inter-university collaboration on entrepreneurship training in the Nordic-Russian context. A qualitative methodology was used to gain understanding on the development of the teachers and the learners in the Project.

Giovanni Bucci and Hilde Hoefnagels’ paper reports on a student project which looks to provide blind and visually impaired tourists the opportunities to experience a mountainous resort that they might not otherwise be able to. A review of useful devices and common barrier problems is provided as is a detailed description of the process the project team used to support these tourists. The learning and transfer of learning for the students is discussed as is the well-being benefits to the tourists.

I am stepping down from the role of Editor-in-Chief and thank you all for your support in making this journal such an exciting insight into the current challenges that educators and students face in Higher Education today and what we are doing about them.
I would like to take this opportunity to introduce my dear colleague Dr Teresa Paiva as the new Editor-in-Chief for this journal. I very much look forward to the next edition.

Yours sincerely
Dr. Julia Claxton (retiring Editor-in-Chief)
NON-PARTICIPATION IN FORMATIVE ASSESSMENT:
A STUDY OF POST-GRADUATE PROFESSIONAL STUDENTS

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Abstract: Formative assessment is used by proponents of student centred learning to facilitate summative attainment. This study uses a phenomenological approach to explore the experiences of a number of students who were admitted to a post-graduate professional programme through recognition of prior learning (RPL) and who have not engaged with the formative process. Informal conversations were used to capture the essence of their experiences and findings were discussed against a framework provided by Cross’s (1981) dispositional, institutional and situational barriers to learning. Implications for future research include exploring interventions to help RPL students overcome barriers and ease transition into higher education at post-graduate level.

Keywords: Barriers to participation and learning; formative assessment; adult learning

1. Background

The Bologna Declaration defines two distinct and consecutive cycles of studies; first cycle (undergraduate) and second cycle (postgraduate), where ‘access to the second cycle shall require successful completion of first cycle studies, lasting a minimum of three years.’ (European Higher Education Area, 1999 p.6). This paper concerns the experiences of a group of non-graduate students admitted to a post-graduate professional programme in Human Resource Management through Recognition of Prior Learning (RPL) where significant work experience is accepted as a proxy for first cycle attainment.

To ease the transition into the classroom, a student centred approach to learning (SCL) is employed as defined as a “broad teaching approach that encompasses replacing lectures with active learning, integrating self-paced learning
programs and/or cooperative group situations”, (Turner 2006, p.6). Activities such as guided group work, case study analysis and discussion are used. Voluntary formative assessments (based on previous exam questions) are offered weekly with formative, constructive feedback provided by email. A voluntary mock exam is offered at the end of the programme prior to students sitting the summative examination. Feedback from official module evaluations and an additional, annual online survey undertaken by the module team suggests that non-graduate students who engage with these measures, consider them instrumental in enhancing performance at summative assessment. Data on exam performance confirms this, with non-graduate participants in the mock exam achieving average marks of 53% (across 3 consecutive cohorts surveyed) as opposed to 43% for non-graduate non-participants, (Daley and Nisa, 2015; Daley, 2015).

This paper examines the experiences of a small number of non-graduates on the programme who did not participate in the formative activities. The matter is significant because it is a recurring phenomenon. Module tutors and fellow students extoll the value of participation, yet every year there are students who fail to participate and subsequently and/or consequently fail the module. Given the positive effect of engaging in formative assessment, why then do some of the non-graduates not participate in the process? What is stopping them?

This question forms a preliminary study for a doctorate in education and it will be explored using a phenomenological approach as the methodology. Phenomenology will be used in the doctoral thesis to seek to understand the experiences of students undertaking a part-time, post-graduate, professional course without an undergraduate degree. This study offers the author an early opportunity to engage with elements of the phenomenological process.

2. Theoretical Framework

Phenomenological studies are inductive rather than theory driven. Initial literature reviews are short as the discussion stage is where the researcher engages with the literature. However, a framework for the study is provided by Cross (1981, p.97), who in her seminal work on adult learners states “it is just as important to know why adults do not participate as why they do”. She identifies three main inhibitors to participation in formal learning as dispositional, institutional and situational barriers. Dispositional barriers relate to personality traits, relative attitudes, self–perceptions about oneself as a learner and expectations about what is required to succeed. Institutional barriers include institutional practices and unfamiliarity with the culture of the educational organization. They include individual perspectives formed out of previous educational experiences. Situational barriers relate to individual circumstances such as work pressures and family commitments.
3. Methodology

The methodology employed may broadly be described as phenomenological, in that ‘a phenomenological study describes the meaning for several individuals of their lived experiences …describing what all participants have in common as they experience a phenomenon’, (Cresswell, 2012, p.76). In this case, the phenomenon experienced was non-participation in learning activities directed at improving attainment.

A purposive sample of five participants were identified through admissions and attainment data with the dual inclusion criterion that they should have been admitted to the course through RPL and not participated in formative assessment activities. The focus on this group was important in order to ‘describe a particular context in rich detail, to make sense of the interpretations and constructions that people in the context make and to analyse them in ways that promote insightful and deep understanding,’ (Arthur et al., 2012, p. 51.).

All potential participants who were invited agreed to take part in the informal conversations. Conversations were utilised to put students at ease, capture the essence of their experience and avoid steering the discussion. This approach was important to help the author remain objective and ‘bracket’ out her own preconceptions and perceptions on the issues. Clearance for the study was obtained through the university’s research ethics process.

4. Findings

Although not all participants were female, female pronouns have been adopted below to avoid identification of participants.

All participants were happy to be on the course and several considered themselves to be privileged to be offered the opportunity. All were employer funded and some had competed successfully against colleagues to secure funding. This lead to a sense of achievement and enhanced confidence. However for some this confidence had since been shaken, once they realised how demanding in terms of time and mental effort the programme would be. Several participants had last experienced formal education over twenty years ago having left school after Level 2 qualifications. Employment experience was considered invaluable in understanding context and practice of HR, but of little use in applying theory and achieving results.

One participant had enrolled on the programme along with a younger, more junior colleague from the same organization. The fact that she had utilised occupational experience to make regular contributions to class discussion had enhanced her self-confidence and sense of status within the cohort. However the younger student had been educated to degree level and had achieved a considerably higher mark at summative assessment. This had led to a feeling of ‘loss of face’ on the part of the participant.

Fear of failure was cited by two participants for their unwillingness to participate in the formative activities. One remarked ‘I was scared to get it wrong’. It emerged that
she had struggled with and abandoned previous attempts at post-compulsory education. Negative experiences at school many years ago, including repeated attempts at passing GCSE (Level 2) examinations had left deep psychological scars. Acknowledging that having satisfied the rigorous RPL admissions process, the university authorities were confident in her ability, she herself remained unconvinced and intimidated by the prospect of undertaking summative assessment.

The second ‘frightened’ participant suggested that she was ‘too scared to try’. She found tutors supportive but felt they failed to appreciate how ‘Uni’ could be an overwhelming experience. She had left full-time education over twenty-five years ago and this was so different to school. She would not have enrolled on the course were it not for the fact that her lack of professional qualification had stymied her career prospects within the organization in which she had been employed for over fifteen years. She wanted to make the most of her time in higher education, but her family and friendship group included no graduates and therefore she had no peers to consult for informal information and advice. She had been convinced that she needed to spend her time ‘learning the theories by heart’ before she started applying them. Now, well into her second semester, she was starting to feel less alienated; she could now understand how formative assessment helped summative performance and she appreciated the friendly, supportive approach of her tutors. She regretted the time it had taken for her to reach this conclusion; it had cost her highly, having failed the examination at first attempt and being forced to undertake the reassessment.

Another participant explained that she lacked confidence and admitted her response to challenges in life had been to shy away from them. Her line manager had convinced her to apply for the course; without the qualification, more junior colleagues would continue to be promoted over her. She was fortunate to be granted time off for the course plus study leave, so she conceded that time was not a constraint but that time was used for displacement activity. ‘I thought it would be easier than this. When it came to studying, I didn’t know where to start and although you kept telling us you have a go and you would help us, I could always find something else to do rather than studying – my house has never been so clean!’

A busy job and family responsibilities were cited as reasons for not spending more time on the course in general and not participating in formative activity in particular by several participants (see below), but one actually resented the intrusion on her time. Although she enjoyed coming to university, the pleasure was derived from the camaraderie of fellow students and the chance to get out of the office for half a day a week! Her objective was to do enough to get by, gain the qualification and move on with her career and her life in general.

A majority of participants had family responsibilities with children and/or elderly dependents. One respondent suggested that lack of practical spousal and parental support and pressure to spend time with the family at weekends had stopped her spending more time studying. Although family members offered encouragement and even boasted of her student status, lack of exposure to academia on their own part meant that they failed to appreciate and thus sanction the time she needed. Whilst doubting her ability to attain the highest grades, she felt that had she had she been free of this psychological burden, she would have taken time to herself to study and would have achieved higher grades.
5. Discussion

In phenomenology, the intention is to describe rather than analyse the data. Early sifting suggests that most responses can be categorised under the headings of dispositional, institutional and situational barriers. Therefore Cross’s (1981) work provides an appropriate framework or set of themes for the presentation of the findings of the study. However, these categories were not found to be mutually exclusive. In particular, there was inter-relationship detected between institutional and situational barriers, warranting the sub-heading below.

5.1. Dispositional Barriers

A fear of failure originating in past experience was cited by several participants as a reason for not engaging in formative activity. This concurs with the findings of a study examining the experiences of non-graduates admitted onto a professional Disability Studies Masters programme on the basis of RPL, where students’ social and learning histories were noted as instrumental in facilitating or inhibiting learning. Bourdieu’s (1990) concept of “habitus” was deemed significant as “a durable unconscious and embodied set of transposable dispositions” (Mutch, 2003, p.384, cited in Cooper, 2011, p.42) formed out of past experiences and socialisation processes.

The feeling of loss of face experienced by another participant may be attributed to ‘social comparison concern’ (Micari and Pazoz, 2014, p.251). Alluding to Festinger (1954) it is suggested that ‘in the learning realm’ when faced with others who appear more competent, the threat of feeling inferior hinders cognitive engagement and the ability to process information. For this participant, the concern is complicated and exacerbated by her work place position as line manager to a fellow, more academically qualified and higher performing student.

For some participants, past experiences of formal learning appeared incompatible with or inadequate preparation for post-graduate study, because of their singular conviction about the nature of learning. For Falasca, (2011, p.586) features of this internal (or dispositional) barrier include “Adhering to pervasive myths or mindsets’” such as the need for rote learning; a binary perspective believing answers to be right or wrong and relying on old categories of ‘learnt’ learning such as the memorisation rather than the understanding of facts.

One participant suggested studying was not a priority in life. The qualification was important for career development but there was no need for the learning experience to be particularly fulfilling, although it was good to make friends. This perspective is well represented in the literature. Rothes, Lemos, and Gonçalves (2013) used Carré’s (2001) model of motivation for adult education to determine that adult learners enrolled in an educational programme showed mainly extrinsic (job related) motives for participation. Intrinsic epistemic (learning for its own sake) motives were deemed less important, but socio-affective (search for interpersonal relationships) were still of significance. Shepherd and Mullins Nelson (2012, p.10) described the adult learner as having “transitioned…to a life inclusive of family,
career and other duties such as civic or volunteer services”. Such students might, therefore, be described as “employees who study” rather than “students who work. King, Saraswat, and Widdowson (2014) found that for adults studying part-time whilst in employment, their prime identity was not that of “student”. Over half were employer funded and some expressed dissatisfaction with the volumes of work and degree of self-directed learning expected leading to the perception that they were teaching themselves rather than being guided by skilled practitioners.

5.2. Institutional-Situational Barriers

Several participants enjoyed the student centred approach to learning and the use of the classroom as a forum for sharing professional experiences, but still struggled to understand the relationship between practice and theory, in particular how a knowledge of theory might serve to explain, justify and/or enhance understanding of practice. In Cooper’s (2011,p.40)) study of non-graduates admitted to a postgraduate professional programme through RPL, the question “can adult learners prior experiential knowledge act as a resource for the successful acquisition of postgraduate academic literacy practices”, was explored?. Would adult learners’ previous professional and life experience act as a resource for writing and research or a barrier to acquisition of the academic literacies needed to complete a Master’s level programme? Findings indicated experience would act as an affordance if the operational knowledge of students on the programme was seen by lecturers as complementing and enriching formal academic knowledge. Also of significance was the nature of the programme’s curriculum and pedagogy; the interventions of lecturers in curriculum design and pedagogy were found to be instrumental in either facilitating or inhibiting learning.

5.3. Situational Barriers

One participant admitted she had not appreciated the vast differences between school and university. She had left full-time education over twenty-five years ago and had initially felt overwhelmed. It had taken her a while to adapt to the learning approach and in the mean time, she had failed the exam. Catterall, Davis and Yang (2014) found that some students from non-traditional academic backgrounds (no previous exposure to higher education) underestimated both the volume and difficulty of the studies they had to do on their courses. Some struggled to see the relevance of subject matter not directly related to their profession and were unclear of the role of theory as opposed to practice. Many students struggled to “reposition themselves as critical learners, particularly in the absence of direct instruction.” (p.252).

Lack of prior exposure to higher education not just on her part, but on that of her immediate or wider circle was considered as an inhibitor by another participant. With little understanding of her situation and the demands of it, this participant’s friends and family were unable to offer anything other than moral support. She had often felt pressurised to spend time with them rather than on her studies. ‘Role
characteristics and their impact on adult learning such as changes in nuclear family roles’ for example marrying and having children or the death of a parent are cited by Falasca (2011, p.586) as key external (situational) barriers to learning. Longworth and Davies (1996) record specific categories of barriers including Intellectual-spiritual which relate to the lack of educational culture in the family or social environment and the fear of failure. Limits on time and ability to access learning spaces are noted as limiting factors.

6. Future Research

Phenomenological research requires repeated re-visitations of the data and sometimes a return to the participants in order to truly capture the ‘essence’ of the lived experience, (Moustakas, 1994). This is the beginning of a much deeper and wider study and therefore it may be inappropriate to draw conclusions at this stage, although further questions may be posed.

For some students, it appears that a student-centred learning approach helps to bridge that gap (Daley and Nisa, 2015). For others, it is insufficient. Perhaps the most significant barrier is one of communication: they do not speak the language of academia. If this is the case, what if anything should be done? Catterall, Davis and Yang (2014) suggest that interventions should be undertaken to close the gap between expectations of students from non-academic backgrounds and the reality of academic life. They question whether such students should be helped to change to fit into the university culture or if the university should create a new institutional habitus (Bordieu, 1990) more inclusive to students from non-academic backgrounds. Giannoukos et al. (2015, p. 49) suggest the responsibility of the tutor is to secure an environment that both facilitates student learning and counters low self-esteem, ‘taking initiatives, fighting the fear of rejection’. If this is the case, then implications for such interventions stretch beyond pedagogy (or andragogy) into questions of resourcing with issues of tutor expertise and funding to the fore.
7. References


‘What’s in it for me?’ – internationalisation and the domestic student

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Abstract: Educational stakeholders agree that one of the main aims of the internationalisation of higher education is to enable students through, intercultural interaction, to acquire intercultural competence which will enable them to operate as global citizens. An extensive literature exists on the internationalisation of higher education and its impact on students but much of this has examined the integration issues, learning challenges and skills development experienced by international students and their perceptions of and interactions with domestic students. By contrast there is a lack of literature re the perceived impact of the presence of international students on the host students who receive them. This study will explore, from the domestic student perspective, the perceived impact of the presence of international students on campus and in the classroom in terms of levels of intercultural interaction, the nature of those interactions and any subsequent development of intercultural skills.

1. Introduction

Governments, Higher Education policy makers and scholars agree that one of the fundamental aims of the internationalisation of higher education is to increase the intercultural understanding and skills of students (de Vita, 2005; de Wit, 1995; Kimmel and Volet, 2012; Knight, 2004). This development of intercultural skills and understanding is viewed as a highly sought outcome of the increased diversity of both campuses and classrooms that the internationalisation of higher education brings. 

So why is intercultural competence viewed as being so important?

The International Commission for Education for the Twenty First Century (1996) identified that due to increased global interconnectivity ‘there is a need for all individuals, communities, cultures, and countries to understand, accept tolerate, respect, and work with cultural diversity’. (Sanderson, 2008) p293.
Black (2004) sees the internationalisation of the student body, in particular, as vital on a grand scale as it results in ‘cultural diversity… intercultural understanding, respect, and tolerance among peoples…commitment to international solidarity…human security and …and a climate of global peace’ – p67.
Despite the agreed importance of developing intercultural competence Deardorff (2006) points out that there is no one commonly accepted definition of the term but she also stresses that there is general consensus re the components of which it is comprised, namely: ‘understanding others’ world views; cultural self-awareness and capacity for self-assessment; adaptability and adjustment to new cultural environment; skills to listen and observe; general openness toward intercultural learning and to people from other cultures; and ability to adapt to varying intercultural communication and learning styles’ p249.

Lee et al (2012) emphasise the benefit of the development of intercultural competencies in terms of student learning stating the advantages include improved critical thinking skills; increased cultural appreciation; more effective group working skills and the ability to consider alternative views and interact appropriately with people different to oneself. Intercultural competencies are also seen as crucial to enhance graduate employability prospects within the global workforce (Messelink et al, 2015; Morley and Cerdin, 2010; Smart, Volet and Ang, 2000; Stier, 2003; Zimitat, 2005). The ability to be cross culturally capable is viewed as a future labour force requirement and therefore vital for students to expand their knowledge and skills in this area (Brown, 2009; Smart, Volet and Ang, 2000; Stier, 2003). A view echoed by Datar et al (2010) who found that employers consider business graduates’ lack of global perspectives a primary weakness whereas Mendenhall et al (2013) stress that intercultural competence is crucial not just in terms of getting a graduate job but also in terms of reaching a global leadership position.

Therefore the literature indicates that becoming interculturally competent is vital in order for graduates to be able to compete in the global workforce and operate as global citizens. Intercultural or cross cultural interactions are viewed as crucial experiences in the development of intercultural competencies (Deardorff, 2006). So one of the greatest potential benefits of having a diverse student population is that such an environment should facilitate these types of interaction between students from different cultures. However, despite the growing numbers of students studying in countries other than their own and claims that this should lead to the facilitation of intercultural competency development, practitioners note a distinct lack of integration between international and domestic students (de Vita, 2005; Leask, 2009) and observe that what actually occurs on campuses and in classrooms is a ‘pattern of ghettoisation’ (Brown and Richards, 2012, p80) with students preferring to stay in their own cultural groups.

**Domestic Students**

A limited number of studies have focused on the domestic student experience on the internationalised campus. A review of ten years of publications on internationalisation from 1996 -2006 conducted by Kehm and Teichler (2007) supports this view in that it identifies seven recurring themes within the literature - tellingly none of these was the effect of internationalisation on home students. Peacock and Harris (2009) acknowledge that very little literature exists re the perceived impact of the presence of international students on those students receiving them in ever increasing numbers. Dunne (2009) refers to this lack of focus on home students as ‘a conspicuous scarcity of research’ p223 whilst Trahar and Hyland (2011) also recognise a paucity of literature. Writing from an American perspective,
Yefanova et al (2015) highlight that there continues to be a lack of focus on domestic students within the internationalisation literature.

Therefore this study will explore, from the domestic student perspective, the perceived impact of the presence of international students on campus and in the classroom in terms of frequency of intercultural interaction, the nature of those interactions and any subsequent development of intercultural skills in order to discover if domestic students do benefit from the internationalised university environment.

2. Background to study

Leeds Beckett University, along with ten other North of England based universities, is a member of the Northern Consortium United Kingdom (NCUK). These institutions offer international students from a number of Far Eastern, African and Indian sub-continental higher education establishments the opportunity to achieve a UK degree without having to study in the UK for a full three years. Typically the international students complete a two year diploma at their home institution and then if successful are offered the opportunity to join Level 6 of an appropriate degree programme at one of the NCUK universities.

Leeds Beckett offered students from the Sino-British College (SBC) in Shanghai the opportunity to gain BA (Hons) in Accounting and Finance (BAAF) by means of the above pathway. In the 2014/2015 76 SBC students joined the Leeds based final year. Of these 76 students 65 were Chinese, 5 Malaysians, 5 Indonesians and 1 Turk. One hundred and fifty six UK based students progressed from Level 5 to Level 6 so an influx of 76 international students increased the cohort size by 49%.

3. Methodology

A phenomenographic research approach was chosen because this best fitted with the aim of the study i.e. phenomenography aims to explore the qualitatively different ways in which individuals experience the world in which they live and to understand the broad spectrum of experience as opposed to the ‘typical’ or ‘norm’ (Yates et al 2012). This approach is seen by the researcher as starting from the point of view of a blank canvas, that is, where student views of the phenomenon in question have not been determined in advance. Therefore the starting point is not a hypothesis to be tested but an attempt to build an understanding of the range of student perspectives. Thus data collection was carried out via one-to-one, semi-structured interviews. In his seminal paper Marton (1981) outlines the key features of phenomenographic research. These include taking a second order perspective; focusing on experiences which have been reflected upon and exploring the range of ways in which a phenomenon has been experienced. Therefore the semi-structured interview is deemed the most appropriate data collection method as it enables the interview to be deep and open (Booth, 1997), meaningful (Entwistle 1984) and allows for reflection.
(Ashworth and Lucas, 2000). It also allows for unexpected lines of discussion which is in line with the phenomenographic approach which focuses on exploring the range of experiences rather than identifying the ‘typical’ or ‘norm’ (Yates et al, 2012). Therefore this method of data collection was deemed the most appropriate forum for individual students to reflect on their experiences and for the interviewer to explore these experiences fully in a confidential environment.

3.1. Ethical Approval

Ethical approval to undertake the study was granted by the University’s Research Ethics Committee.

3.2. Sample

In line with the phenomenographic principle of bracketing i.e. the requirement that the researcher should put aside his or her own presumptions, the sample was determined on a convenience basis with the only criteria being that participants must be home students who had studied all of the earlier levels of the BA Accounting and Finance degree course at Leeds Beckett University. All students meeting these criteria were bound to share, to some degree, the teaching and learning environment with the students from the Sino-British College in Shanghai. The resulting sample was deemed to reflect that the final year cohort was made up of students from a variety of backgrounds and with a wide range of experiences. (Please see Appendix 1: Profile of Interview Participants).

3.3. Data Collection

Seventeen interviews were conducted. The literature indicates that this should have been sufficient to achieve variation in conceptions (Stenfors-Hays et al, 2013) and also for a fairly novice researcher it is important that the data remained manageable (Mason, 2010).

3.4. Interviews

To enable the participants to feel at ease during the interview sessions the interviews were held in small tutorial rooms in the main teaching building. All students were familiar with these rooms as these are where tutors had held drop-in sessions and personal tutor meetings throughout the students’ time on the course. The interviewer silenced her own judgements during the interview and instead focused on listening empathetically to each participant.

Each recording was transcribed verbatim. The interviews and transcripts were anonymised as far as possible in that:
• the participant was not mentioned by name during the interview;
• the student’s name was not stated on the transcript;
• Instead, each recording and the corresponding transcript were given a unique code.

4. Data Analysis

The seven stage analysis cycle of Sjostrom and Dahlgren (2002) was used as the template for analysis.

• Familiarisation – the seventeen transcripts were read through at least four times in order to become familiar with the content. Transcripts were also checked against recordings at this point and any errors were corrected. At this stage, there was no attempt to focus on individual statements.
• Compilation – excerpts were compiled manually by copying and pasting responses from the participant transcripts so that each area explored was immediately followed by all the statements relating to that area. The unique identification code originally given to each transcript was used to identify the source of each response so that responses could always be reviewed in light of the context of the overall transcript (Mann et al, 2007).
• Condensation – the parts of statements that seemed relevant to the study and significant to the interviewee were then identified. Excerpts retained the original interview code so that the excerpt could still be viewed in relation to the answer and transcript from which it was taken.
• Preliminary classification and emergence of categories – similar statements were grouped together and categories started to emerge.
• Preliminary comparison of categories – at this stage borders were established between categories and quotations used to illustrate and define the borders.
• Contrastive comparison – each category was described in a way that indicated its unique character and how it related to the other categories. These categories constituted the outcome space which Marton (1981) describes as a ‘kind of collective intellect’ p177.

5. Findings

The study identified six qualitatively different ways in which domestic students perceived the presence of the SBC students in terms of the opportunity to interact with them.
Category 1 – ‘Them’ and ‘Us’ - the cohort of SBC students was acknowledged as part of the final year but perceived as a separate entity by some domestic students who did not interact with them and apparently had little desire to do so.

I3 I think, well, they’re always in the lectures or seminars really. I’ve never really done work with them I don’t think.

I15 I think in the lessons – they stuck together in their group and we stuck together with the people we knew, so I didn’t really speak to any of them.’

The statements used to illustrate and also de-limit this category indicate awareness of the presence SBC students but as a separate cohort who attended classes in a group. The use of words such as ‘they’ and ‘them’ suggest the perceived otherness of the SBC students.

Despite the lack of interaction participants, through observation, did become more aware that the SBC students were in some way different to themselves.

I4 Er – I’d say they like to work in groups; whenever you see them in the Library or doing the seminar work, it’s always in bigger groups where I’ve had more experience of working on my own or maybe in twos but whereas with them you see them in groups of around ten which is a lot different to what I’ve seen around, so yeah.

A number of students observed that the students from SBC took a more collective approach to studying than their UK counterparts. The student’s comments are typical in that they indicate that they are aware that this approach is different to both their own way of working and that of other people that he has observed in the Library.

I8 Erm, another thing that I’ve noticed about the culture is that they’re maybe not obsessed but fixated on technology and mobile phones and things but they use that in a good way though to help their learning. I’ve got to say that when a slide would pop up in a lecture, they’d all be getting their phones out and taking a picture of it. Yeah, so that was interesting to see; they make better use of technology than I think we do personally as students.

This statement again demonstrates awareness of difference or other. The SBC students’ use of technology was not only be noted but commended in terms of how they were using technology to support their studies.

Category 2 – ‘Them’ and ‘Us’ with Compulsory Interaction – as with the previous category the conceptions of students indicated that the cohort of SBC students was acknowledged as part of the final year but perceived as a separate entity by the domestic students. Interaction did take place but only at the behest of the tutor in a formal classroom setting. It is apparent from the statements below that these interactions were not voluntary.

I4 Erm, nothing outside. There’s been odd seminars where I’ve had to work in groups. I wouldn’t say there’s been a lot, no.

I8 The only interaction I’ve had with them was in a seminar where we were put in pairs and I was put in a pair with one of the students from SBC and we chatted minimally.

I11 No, I mean they’d be instances in seminars where you’d have to get in groups and contribute.
Interaction only appears to have taken place because some domestic students had to work in or were put in groups with students from SBC. There is no inference that these mixed groups would have arisen without the intervention of the tutor. Nor is there any suggestion that they enjoyed the experience or that this limited interaction led to any further contact.

Category 3 – ‘Missed Opportunity’ - as in the previous two categories the cohort of SBC students was acknowledged as part of the final year but perceived as a separate entity by the domestic students. Interaction did take place but only at the behest of the tutor in a formal classroom setting. However, the lack of interaction was viewed as a missed opportunity to find more about people from another culture.

No, to be honest, just the fact that now that we’ve discussed this I do feel that I have missed a chance to get to know any of them better and get an insight into how they learn and sort-of, listen to stories from China and their own experiences.

I think myself – I always did want to talk to them but I am a shy person anyway so I stick to what I know. So it would have been nice to talk to them but I never knew how to talk to them, if that makes sense.

As well as indicating that the interview subjects felt that they had missed a chance to interact with the SBC students the first excerpt demonstrates that the interview had enabled participants to reflect on their experiences which resulted in the uncovering of a feeling that the interviewee had previously not realised. The second statement implies that the respondent wanted to talk to these students but did not know how to start up a conversation.

Category 4 – ‘Classmates’ – the cohort of SBC students is no longer just viewed as ‘them’ but individual students from the cohort were viewed as classmates who were a useful source of subject knowledge.

If you have a group of people who are all exactly the same – you’re not going to pool ideas – you’re all going to have the same opinions and ideas and in that sense, I think it’s bad. It was quite nice to have a broad group of people... I mean, I think, overall, it is just good to be able to talk to other people whether they’re your friend or not – if you work with them – it’s always good to get ideas from other people.

The response indicates that the participant appreciated contributions from people who were different to themselves in order to get a wide range of contributions.

Yeah, I’ve been to like, in Accounting Issues, we had these two girls called Rosie and erm, I’ve forgotten the name, er, Susan, and we had them and like, I learnt a lot from them because they had certain stuff and certain experiences and like, added to certain things that I never thought of in my question where I realise I’m going wrong and from every student you learn something different, I always believe that.

This category demonstrates that some students were open to and greatly valued input from other students who had alternative viewpoints and in order to do so they were having meaningful interactions within the classroom. The fact that in some instances Western names were known indicates that there was some level of friendship. However, there is no inference that these interactions went beyond the classroom setting. (NB It is very common practice for Chinese students to adopt a Western first name and to refer to themselves and each other by this name.)
Category 5 – ‘Team Members’ – in this category individual students were viewed as class mates and key members of assessment activity team. Initial interaction took place in the classroom as part of the formal curriculum but unlike Categories 2, and 3 this led to further interactions off campus. However, the focus of these subsequent interactions remained course related matters.

I1 I was actually in a group, by myself, with three of the Shanghai students which I found interesting. I think they were pretty shy really and it was really hard to engage in conversation. So when you finally got a conversation there were really talkative and they wanted to tell you all sorts. The Indonesian student used to want us to work back at her flat so we always used to go back to her flat.

This excerpt acknowledges the initial challenges of having a conversation but that once this hurdle was overcome then the international students became very communicative.

I1 I don’t even think I took it upon myself to be team leader. They just expected it of me in a sense. I was making sure that I set definite deadlines so as well as doing my own role in the group I had to make sure I was checking everyone else’s role.

Those who experienced this level of interaction perceived that there was an expectation that the domestic student take on a leadership role and that ultimately this was beneficial in that it led to the development of skills such as time management.

Category 6 – ‘Friends’ - individual students from the SBC cohort were viewed as friends. This category had not originally emerged as distinct from the previous category but after further review of the data, it became evident that in this instance interaction had taken place that was not associated with the course or assessment. Although initial interaction may have taken place in the classroom students also got together on a social basis.

I9 Yeah – I, erm, I guess from what I’d done at uni through different societies and the Student’s Union because I was quite keen to chat to the group or anyone who is new but particularly that group, so I had a good friend called... Kurt. Can’t remember his Chinese name now; impossible to remember. Kurt and a few of his friends came along to some of the evenings which I’d hosted as part of the Christian Union and had come to a number of events like that.

Where voluntary interaction on a personal level took place a greater awareness of another culture and another way of doing things became evident.

I9 I’ve come into contact with a lot of people from different cultures and I found that really helpful as it’s not very often that you get the opportunity to meet someone on a friendship level who’s from a different culture where you can relate to them on a very personal level instead of where I’m working now it’s very professional and I guess having that understanding on the personal level from my friendship with Kurt at uni has really helped me appreciate more, maybe what’s going on behind the scenes when you meet people on a professional level.

The statement above indicates that this friendship led to a shift in the subject’s personal perspectives in terms of ensuring the importance of maintaining an open mind when meeting people for the first time.
4.1. Outcome Space

The outcome space is the forum in which the results of the phenomenographic study are presented (Harris 2008) and as Akerlind (2005) points out that the outcome space represents ‘the full range of possible ways of experiencing the phenomenon in question’ p323. The traditional form of the outcome space was hierarchical however as phenomenography has evolved as a research methodology so too has the form of outcome space leading to a wider number of formats being used e.g. linear, matrix, interconnected categories. In this instance, the categories of description generated an outcome space in the form of a matrix.

4.2. Variations between the Categories of Description

The categories of description of the perceived impact of the arrival of the SBC students are delimited from each other through dimensions of variation that emerged from the data. These are summarised in Table 1. Three dimensions of variation emerged from the data: namely interest, interaction and appreciation

4.3. Level of Interest

A key variation between the categories is the level of interest which was demonstrated in the arrival of the SBC students. In both Categories 1 and 2 there appears to be a general lack of interest in the SBC students. Category 3 responses reveal an unacted upon desire to find out more whereas Categories 4 – 6 infer a tendency for open mindedness and curiosity about others whether that is the belief that a person can always learn from those around them or having a welcoming attitude to everyone. Those with a higher level of interest also had a higher level of interaction with the SBC students and a greater appreciation of the benefits deriving from their presence and contribution.
4.4. Level of Interaction

There is a wide variation in terms of level of interaction across the categories from mere acknowledgement of the presence of the SBC students and limited observation in the lower numbered categories to much higher levels of interaction, in terms of both frequency and meaningfulness, evident in Categories 4 to 6. As the categories ascend this increase in the level of interaction is reflected by an increase in familiarity as the SBC students being viewed as a mass presence on the final year of the course to being known and valued on an individual basis. However where classroom based exchanges took place at the behest of the tutors there appeared to be little or no follow up interactions if the domestic students had little interest in doing so. These data support earlier findings (Leask 2009; Volet and Ang 1998) that merely bringing international and domestic students together does not necessarily result in meaningful interactions taking place. Of concern is the fact that though some students were interested in communicating and interacting with the international students but felt unable to do so.

4.5. Level of Appreciation

The variation in the level of appreciation of the presence of the SBC students and the opportunities that afforded reflected, to a great extent, the level of interaction across the categories i.e. in Categories 1-3 there was no appreciation whereas in the higher numbered categories the SBC students were valued on an individual basis in terms of what they could contribute to the learning experience and also ultimately as friends.
Those who voluntarily and frequently worked with SBC students felt that they derived a range of benefits from these interactions. Those who interacted with the SBC students solely within the classroom setting appreciated the alternative perspectives which their contributions provided. Those who voluntarily and frequently interacted, both inside the classroom and socially, perceived those interactions as leading to personal development such as the development of leadership skills and ultimately to an increase in cultural awareness and sensitivity. It is only at this level of interaction that students would be regarded as developing the intercultural competencies which are viewed as essential to being able to operate as a member of the global workforce in the 21st century (Brown, 2009; Datar et al 2010; Smart, Volet and Ang, 2000; Stier, 2003).

4.6. Level of Impact

As is evident in Table 1 the variation in the level of impact mirrored that of both the level of interaction and the level of appreciation i.e. in those categories where there was little interaction or appreciation there was little or no perceived impact of the presence of the SBC students on the domestic students. On the other hand where there were high levels of interaction and appreciation then domestic students perceived that the SBC students had had significant impact on their final year experience both within and outside the classroom. This, in turn, led to at the very least an increase in awareness of other cultures and where there were greater levels of interaction and appreciation students felt that their experiences led to personal development and even shifts in personal perspectives. It is only at this level of impact that students would be regarded as developing the intercultural competencies which are viewed as essential to being able to operate as a member of the global workforce in the 21st century (Brown, 2009; Datar et al 2010; Smart, Volet and Ang, 2000; Stier, 2003).

Thus the outcome space of this study demonstrates several key findings relating to interactions between host students and international visiting students. The findings suggest that a number of students had very limited interaction with the SBC students and that they had no real desire to do so either. However, others who experienced little interaction would have like to have further contact and viewed the lack of interaction as a missed opportunity. The reasons put forward by these students for the lack of communication ranged from shyness to not knowing how to go about it. Those who benefitted most had frequent and meaningful interactions with their international peers.

6. Conclusion

In line with the existing literature, this study demonstrates that cross cultural interactions do not take place merely because domestic and international students share campuses and classrooms. However, those students who are curious and open-minded towards other cultures are much more likely to interact with international
students and in turn benefit greatly from those interactions. On the other hand, a number may experience little or no benefit from the presence of international peers because either they lack interest in doing so or lack of skills/confidence to interact with them.

Therefore this study adds to the existing literature by indicating that before domestic students can be expected to interact with their international counterparts that they must have opportunities to ignite and develop their curiosity and interest in other cultures either prior to or during the sojourn of the international students. Further research is needed to investigate the most effective types of strategies and activities which could be used to stimulate such curiosity and interest.

Secondly, this study contradicts much of the existing literature which indicates the reasons for non-interaction lie in the negative attitudes of domestic students (Barron, 2006; De Vita, 2005; Dunne, 2009). This research found that the reason domestic students fail to interact with their international peers is because they feel they lack the necessary confidence/skills to do so. Therefore institutions also need to ensure that those domestic students who wish to interact with international students have the opportunities and tools to do so. This again would require intervention before or soon after the arrival of the international students so that domestic students feel confident in welcoming them and increase the possibility of interactions taking place from the beginning of their sojourn.

Therefore HEIs need to focus on their domestic student body in order to enable them to develop curiosity about all things ‘other’ and to ensure that they have the skills to make the most of the intercultural opportunities that the curriculum provides. After all the central aim of internationalisation of higher education is to afford opportunities for meaningful interactions to take place so that both home and overseas students can develop the international competencies required by globally minded employers and to contribute as global citizens.

7. References

Appendix:

Appendix 1: Profile of Interview Participants

<table>
<thead>
<tr>
<th>Interview participant</th>
<th>Male/Female</th>
<th>Ethnicity</th>
<th>Work-placement Y/N</th>
<th>Repeating Part/Whole</th>
<th>Living Independently</th>
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</table>

Key
AB  Asian British
MR  Mixed Race
WB  White British
FOSTERING OF BUSINESS AND MANAGEMENT STUDENTS LEARNING IN ACCOUNTING COURSES

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Abstract: Students capable of continuous learning for development of skills necessary for professional competence in length of time become professionals able to flexibly adapt to the society and business progress. The study focuses on fostering professional bachelor’s Business and Management study programmes students’ learning and assessment in basic Accounting courses. Thus the paper examines educational theoretic implications in the students learning process. Besides the coherent analysis implemented on the population of the students who have recently taken scheduled Accounting courses at Business Management Faculty of Vilniaus Kolegija/ University of Applied Sciences is presented. The paper as well provides insights for further research in the study area.

Keywords: accounting, assessment, competence, learning, skills, students

1. Introduction

Following the strategies of education in European Union creation of a “second” higher education sector, composed by higher education institutions (hereafter HEIs) oriented towards professional education, was mainly motivated by educational concerns to improve the quality of professional tertiary education (Lepori, 2008). In line with the Republic of Lithuania Law on Higher Education and Research (2014) provisions in Lithuania same as in other European Union countries, non-university HEIs have been granted the right of primary educating future business professionals within the pale of professional bachelor’s business and management study programmes. Certain basic accounting (hereafter accounting) courses mostly hold a relevant place in the former.

Accounting courses commonly have been marked as a “dry” study subject, stuffed with structured definitions of technical terms, complex rules, and standards, uninteresting “number crunching”, and the “knowing” of concepts (Springer & Borthick, 2004). Variety of surveys conducted in accounting learning/teaching in HEIs had shown that a good many students from all majors begin their accounting courses with great trepidation, having heard about its difficulty along with high
demand in possession of mathematical skills. Students’ evaluations of these courses happen to be lower than for those more related to their chosen study majors (Rahman, 2006). Accordingly, accounting courses are often considered a challenge to teach to any major students, especially in pursuance of ensuring an effective environment for their learning (Springer & Borthick, 2004; Struyven et al., 2010; Watty et al., 2010; Stivers et al., 2011; Turner, 2011).

The study focuses on fostering professional bachelor’s business and management study programmes students’ learning and assessment in basic accounting courses. Thus the paper examines educational theoretic implications in the students’ learning process, especially within the accounting study area. Besides the coherent analysis implemented on the population of the students who have recently taken scheduled accounting courses at Business Management Faculty of Vilniaus Kolegija/ University of Applied Sciences is presented. The paper as well provides insights for further research in the study area.

2. Educational theoretic implications in students learning process

Sound researches, that have been conducted in learning theory and in particular allowed to recognise learning styles diversity among students, supposed to facilitate changes in accounting courses aimed at balancing the conventional content teaching with constructivism learning, turning the passive learning environment into the livelier one, finally, preparing various major graduates for the challenging working environment.

Initial interest in learners’ differences impelled the rise of scholarly studies in learning and/or cognitive styles. In the latter decades learning styles have being more and more seriously considered in the teaching and training world. According to Adetunji (2004) “learning style” seems to emerge fairly as a common term or a replacement for cognitive style term in the 1970s. Indeed, the impression that is formulated in the usage of these terms is that those working on “learning style,” take cognitive style into consideration but would describe themselves as interested in more practical, educational, or training applications and thus are more “action-orientated,” while the term cognitive style has been reserved for theoretical and academic descriptions.

B.B. Fischer and L. Fischer in the article “Styles in Teaching and Learning“, published in 1978 in journal “Educational Leadership”, defined the style as hypothetical construct which helps to explain the teaching-learning process. It refers to a pervasive quality in the behaviour of an individual, a quality that persists though the content may change. In every field of endeavour, people can be identified with distinctive qualities of behaviour that are consistent through time and carry over from situation to situation (Adetunji, 2004). Among the scholars who have seen the practical educational, both in teaching and in learning, or training, application of learning styles one of the most significant is David A. Kolb, the creator of the Experiential Learning Theory (hereafter ELT).
ELT, introduced by Kolb in 1984, is constructed to develop a holistic model of the experiential learning process and a multi-linear model of adult development. According to Kolb, ELT is based on the works of prominent scholars who gave experience the central role in their theories of human learning and development, especially: John Dewey, William James, Carl Jung, Paulo Freire, Kurt Lewin, Jean Piaget, and Carl Rogers. ELT is built on six propositions shared by the above-named scholars. In short:

1. Learning is best conceived as a process, not in terms of outcomes.
2. All learning is relearning.
3. Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world – feeling and thinking, and reflection and action.
4. Learning is a holistic process of adaptation to the world [that] involves the integrated functioning of the total person – feeling, thinking, perceiving, and behaving.
5. Learning results from synergetic transactions between the person and the environment.
6. Learning is the process ...where social knowledge is created and recreated in the personal knowledge of the learner (Kolb & Kolb, 2005).

Kolb defines learning as the process whereat knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience. Two dialectically related learning modes of grasping experience – Concrete Experience (hereafter CE) and Abstract Conceptualization (hereafter AC) – and two dialectically related learning modes of transforming experience – Reflective Observation (hereafter RO) and Active Experimentation (hereafter AE) – are delineated in ELT. Thereby experiential learning is a process of constructing knowledge that involves a creative tension among CE, RO, AC and AE learning modes that is responsive to contextual demands. This process is portrayed as an idealized learning cycle or spiral where the learner according to Kolb “touches all the bases” – experiencing, reflecting, thinking, and acting – in a recursive process that is responsive to the learning situation and what is being learned. Immediate or concrete experiences are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences. ELT anticipates that the described “idealized” learning cycle will vary by persons’ learning style and learning context.

ELT developmental model defines three stages: (1) acquisition, from birth to adolescence, where basic abilities and cognitive structures develop; (2) specialization, from formal schooling through the early work and personal experiences of adulthood, where social, educational, and organizational socialization forces shape the development of a particular, specialized learning style; (3) integration in midcareer and later life, where non-dominant modes of learning are expressed in work and personal life. Development through these stages is characterized by increasing complexity and relativism in adapting to the world and
by increased integration of the dialectic conflicts between CE and AC and AE and RO. Development is conceived as multi-linear process based on a person’s particular learning style and life path - development of CE increases affective complexity, of RO – perceptual complexity, of AC – symbolic complexity, and of AE – behavioural complexity. Because of particular life experiences and the demands of an environment, learners develop a preferred personally patterned way of choosing among the four learning modes and resolve the conflict between being concrete or abstract and between being active or reflective.

Much of the Kolb’s research on ELT has been focused on assessing individual learning styles, using the Learning Style Inventory (hereafter LSI) which originated in 1969. The continuous research and observation of the patterns of LSI scores enabled Kolb to identify four learning styles that are associated with different approaches to learning - Diverging, Assimilating, Converging and Accommodating (Kolb & Kolb, 2005).

People with CE and RO as dominant learning abilities have Diverging style. In formal learning situations, they prefer to work in groups, listening with an open mind to different points of view and receiving personalized feedback. People with AC and RO as dominant learning abilities have Assimilating style. In formal learning situations, they prefer readings, lectures, exploring analytical models, and having time to think things through. People with AC and AE as dominant learning abilities have Converging style. In formal learning situations, they prefer to experiment with simulations, laboratory assignments, and practical applications. People with CE and AE as dominant learning abilities have Accommodating style. In formal learning situations, they prefer to work with others to get assignments done, to set goals, to do field work, and to test out different approaches to completing a project.

The abovementioned four basic learning styles are shaped by transactions between people and their environment at five different behaviour levels – personality types (hereafter PT), educational specialization (hereafter ES), professional career (hereafter PC), job type (hereafter JT), and adaptive competencies (hereafter AdC). Therefore, ELT defines the learning style as a social psychological concept that is only partially determined by PT but is influenced by specific demands of ES, PC, JT, and AdC.

Learners’ specialization in the realms of higher education studies influences their orientations toward learning, resulting in particular relations between learning styles and early professional education. While studying in HEIs under a certain study programme students are induced by faculty to adjust inherent learning styles through developing suitable AdC or skills. As it was identified by Kolb, the Diverging style is associated with valuing skills: relationship, helping others, and sense making. The Assimilating style is related to Thinking skills: information gathering, information analysis, and theory building. The Converging style is associated with Decision skills: quantitative analysis, use of technology, and goal setting. Finally, the Accommodating style encompasses a set of competencies that can best be termed as Action skills: leadership, initiative, and action. Figure 1 summarizes relationship of learning modes, learning styles and some behaviour levels. Please note that all illustrations in the paper are composed by the author.
LSI mainly fulfils two purposes: (1) to provide a research tool for investigating ELT and the characteristics of personal learning styles; (2) to increase understanding of the process of learning. The latter has been nominated by the author as the primary purpose. Increasing learners’ awareness of how they learn, or their capacity for meta-cognitive control of personal learning process, enable learners to monitor and select learning approaches that work best for them in different long-life learning situations. Moreover, by providing a language for talking about learning styles and the learning process, LSI can foster conversation among learners and educators about how to create the most effective learning environment for those involved.

Having grew up in constructivism ELT has been widely accepted as an expedient framework for learning-centred educational process development and life-long learning. Since its appearance, there have been many studies on ELT and LSI especially. By 2005 a bibliography of research on Kolb’s ELT/LSI included over one thousand entries. Although classification by field is not easy as many studies are interdisciplinary, addressing learning and educational issues in several fields, around 43% of studies were conducted in Education (including higher education and adult learning); 21% in Management; 10% each in Computer/Information Science and Psychology; 7% in Medicine; 6% in Nursing, 2% in Accounting, and 1% in Law (Kolb & Kolb, 2005).

There have been many studies that applied ELT/LSI to understand and manage differences between students’ learning and faculty teaching styles in order to improve the educational process in HEIs. Jointly these studies suggest that educators need to adapt their teaching styles and instructional methods to facilitate the learning process by offering a variety of learning opportunities appropriate to different students’ learning styles and to different subject matters. Faced with a situation in which the learning styles of the faculty and the students differ, educators should use instructional methods valuable to the students but not necessarily appealing or intellectually rewarding to themselves. Herewith faculty should foster students’ adaptive flexibility to alter their learning styles in response to the learning demand of...
a specific learning situation. To the extent that the students’ learning preferences are respected, it is also important for the students to develop their abilities to shift their learning strategies to match the demands of a particular study subject or area.

Mainly there have been two streams in ELT/LSI research activity in accounting education. One has been focused on using ELT/LSI to design instruction in accounting and studying relationships between the learning style and performance in accounting courses. Studies in the stream enabled scholars to stress that for the experiential learning to be effective both for faculty and students, the instructors need to be properly trained in the design and delivery of the experiential curricula. Special research concluded that students in the experiential learning accounting classroom may have formed a better understanding of the concepts, thus successfully retaining knowledge better than in the lecture class. Studies as well showed that sensitivity to differences in learning styles in instructional design may be warranted, even though assessment of an individual’s learning style is problematic.

Developed in constructivism by Howard Gardner, the Multiple Intelligence Theory (hereafter MIT) has been widely accepted and implemented in the educational practice. Gardner (1983) proposed the nine intelligence modalities: logical-mathematical; visual-spatial; intrapersonal; interpersonal; verbal-linguistic; bodily-kinaesthetic; musical-rhythmic; naturalist; and harmonic. Withal he strongly opposed the idea of labelling learners to a specific intelligence. Any learner usually possesses all eight intelligences, although has his own particular mix of intelligences, with some dominating over others.

3. Analysis assumption, methodology and findings

Actually, not only the “number smart” students, in virtue of MIT the learners with dominating logical-mathematical intelligence or agreeably to ELT/LSI the learners with dominant AC mode or Thinking skills, can make headway in accounting studies. Thus it seems reliable that in a duly operated accounting course students’ achievements are not substantially related to possession of mathematical skills. To verify the given assumption frequency and correlation analyses have been prosecuted using SPSS Statistics and Microsoft Excel software on total population of 135 students. The students completed scheduled accounting courses at Business Management Faculty of Vilniaus Kolegija/ University of Applied Sciences in the autumn term 2014-2015, having passed mathematics courses formerly. Therein 83% of the population were studying at business and 17% – at management study programmes. More data on the students grouped by study programmes and gender is given in Figure 2.
Figure 2. Students having completed accounting courses by study programmes & gender

Usually, in HEIs of Lithuania students are evaluated using ten-point grading scale (SKVC). The pass grades for a single course are: 5 (sufficient), 6 (satisfactory), 7 (highly satisfactory), 8 (good), 9 (very good), and 10 (excellent). Thus, the range for the analysed data lies between minimum grade of 5 and maximum grade of 10.

Table 1. Frequency analysis indicators of students’ performance in Mathematics and Accounting courses assessment

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<th>Accounting</th>
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<td>0.209</td>
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</tbody>
</table>

The frequency analysis data is submitted in Table 1 and Figure 3. Overall students’ achievements in mathematics were low with 38% in grade 5 and 24% in grade 6 of total grades units. This enables to point out that majority of the population are not learners with dominating mathematical skills or agreeably to ELT/LSI learners with dominant AC mode. The same students’ accounting grades, in general, were higher with 36% in grade 7, 34% in grade 8, 12% in grade 9, 6% each in grades 5, 6 and 10 of total grades units. Thus the accounting grades’ histogram is about normally distributed, while the Mathematics grades’ histogram is positively skewed.
Figure 3. Students’ performance assessment in mathematics and accounting courses

The correlation analysis data are provided in Table 2. Considering that calculated Significance level (2-tailed) value of 0.01 is below the determined 0.05 level, it can be stated that there is a statistically significant correlation between tested variables of accounting and mathematics grades. Based on the calculated 0.22 level of the Pearson correlation coefficient, it could be concluded that accounting and mathematics grades are positively correlated. Herewith according to Guilford (1956) relationship between the studied variables should be considered as definite but indicating small.

Table 2. Correlation analysis indicators of students’ performance assessment in mathematics and accounting courses
<table>
<thead>
<tr>
<th>Course</th>
<th>Indicator</th>
<th>Mathematics</th>
<th>Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>Pearson correlation coefficient</td>
<td>1</td>
<td>0.220*</td>
</tr>
<tr>
<td></td>
<td>Significance level (2-tailed)</td>
<td></td>
<td>0.010</td>
</tr>
<tr>
<td>Accounting</td>
<td>Pearson correlation coefficient</td>
<td>0.220*</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Significance level (2-tailed)</td>
<td>0.010</td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed)

Although students with possession of mathematical skills inherently more receptive to the knowledge of accounting, in a properly operated accounting course students’ achievements are not substantially related to mathematical skills. In such a difficult course of business and management professional tertiary education like accounting, it stands reasonable that faculty need to ensure for students with diverse dominant learning styles (frequently learners with non-dominating mathematical skills) a benefitting learning environment to maintain their concernment in the subject and the perception that solid performance is achievable despite personal “number crunching” abilities.

4. Conclusions

Present-day accounting educators need to adapt their teaching styles and instructional methods to facilitate the process of Business and Management students’ learning of Accounting by offering a variety of appropriate experiential learning opportunities to the students with diverse dominant learning styles as it is shown in the implemented coherent analysis.

For the teaching/learning to be effective the instructors need to be aware of recognising students’ learning styles and to be qualified in the design and delivery of the experiential curricula. It will from one side warrant sensitivity to differences in students’ learning styles on instructional level and from the other side foster students’ adaptive flexibility to alter their learning styles in response to the learning demand of accounting specificity. Benefitting learning environment in turn will maintain students’ concernment in the subject and the perception that solid performance in accounting learning is achievable.

5. References

BUILDING A JOINT TRAINING PROGRAMME FOR IMMIGRANTS AND NATIVE POPULATION

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University of Jyväskylä

Abstract: The purpose of this paper is to describe a project “EntreEtelä-Savo” as a case study. The project has started on 1st of September, 2015 and will last until 31st of August 2017. The project’s objective is to familiarise educated immigrants and Finnish citizens who live in the South-Savo region with entrepreneurship and establishment of their own enterprises (Etelä-Savo-Ohjelma. Maakuntaohjelma vuosille 2014-2017, 2014). In other words, the objective of “Entrepreneurial path to working life-EntreEtelä-Savo” -project is to promote and strengthen opportunities of the above-mentioned target groups to find employment through the establishment of their own companies. These requirements are fulfilled through a specific training model.

Keywords: EntreEtelä-Savo; entrepreneurial path; immigrants; South Savo; training programme

1. Introduction

This paper describes the project “Entrepreneurial Path to Working Life – EntreEtelä-Savo”. The project’s implementation is based on the applied entrepreneurship training model that was tested earlier in Odense, Denmark. The goal of the applied model is to give basic competences and skills to participants of how to become an entrepreneur and create individualised paths for self-employment (i.e. entrepreneurship) by the means of training.

The participants’ level of entrepreneurial competences will be developed during the training, and their competences are also directed towards entrepreneurship. In addition, another objective of the project is to help immigrants to assimilate in the South-Savo region as well to become integrated in the Finnish culture. Aspects of the participating immigrants’ assimilation and integration in the Finnish culture will also be articulated during the training. The project also contributes to the development of networking and intensification of cooperation between different actors (Joronen, 2012). Furthermore, the project aims at the intensification of multi-sectoral cooperation with the higher educational institutions (HEIs) of the region and especially among the organisations that promote entrepreneurship.

During the training course, the participants will receive an extensive and practical picture of entrepreneurship as well as opportunities to learn competences about entrepreneurship through coaching (Koellinger & Thurik, 2012; Suddaby et al., 2010). The participants will be assisted in the process of conceptualisation about an
enterprise’s whole range of activities, acquisition of an entrepreneurial way of action, and finding one’s own entrepreneurial path.

2. Entrepreneurship education and training

In accordance with the Guidelines for entrepreneurship education in Finland (2009), one of the central aims of all educational institutions is to increase entrepreneurship among the Finnish citizens and raise the popularity of an entrepreneurial activity by providing required knowledge, skills and competences and building conditions for the productization of entrepreneurial know-how. The entrepreneurship education can be also facilitated by the development of an online learning environment for development of flexible learning opportunities, improvement of individuals’ networking and communication skills (Best Practices in Online Teaching Strategies 2009; Guidelines for entrepreneurship education 2009).

The developed Entrepreneurship Path is in accordance with three learning theories – constructivism, cognitivism, and connectivism. In particular, we construct an entrepreneurial learning environment where individuals “learn by enterprising” that is in accordance with the constructivism theory of learning (Engeström 1996; Riegler 2015). Additionally, we develop entrepreneurial capabilities of learners (potential entrepreneurs) and already practicing entrepreneurs by reinforcing their inventive learning that is in accordance with the cognitivism theory of learning (Dulany 2014; Newell & Simon 1972; Ruohotie 1998). Finally, we engender an entrepreneurship-oriented online operational culture and online learning environment that is in accordance with the connectivism theory of learning (Barabási 2002; Best Practices in Online Teaching Strategies 2009; Sokolovskaya 2015; Vaill 1996).

From the pedagogical standpoint, the developed Entrepreneurship Path leads to the attainment of multiple positive outcomes, such as (a) building entrepreneurial mindsets, (b) developing entrepreneurial capabilities, (c) increasing entrepreneurial status, and (d) raising entrepreneurial performance.

With our Entrepreneurship Path, we create a new way to teach entrepreneurship (Brush 2013). We believe that in order to teach entrepreneurship, an individual needs to practice entrepreneurship. Therefore, our three-phase model contributes to “learning by enterprising”: individuals learn by planning, opening and owning enterprises, and acquire necessary practical skills and professional competences by practicing entrepreneurship. However, being educators we also believe that practical aspects of entrepreneurship can be fuller explained through the applied theory. Therefore, our model also contributes to “enterprising by learning” (Brush 2013): individuals learn ground and applied theory, practice methods of entrepreneurship in the class, and then realize entrepreneurial opportunities by opening a company and applying the earlier learned information in practice. In particular, with our three-stage program model, we refine the concept of “practice” by explaining various contexts of entrepreneurial skills and entrepreneurial mindset through the analysed real-life cases of entrepreneurs presented in our online manual.
3. Immigrant entrepreneurship

Entrepreneurs that have certain immigrant background are generally researched from the perspectives of entrepreneurial resources, entrepreneurial motivation, and development of entrepreneurial capabilities, entrepreneurial culture, and overall entrepreneurial mindset (Sandelin 2014). The very process of immigration requires a number of entrepreneurial skills since it is connected directly with taking risks, intense competition over a safe place of living, status, and achievement. In addition, immigration is about the adoption of a foreign work culture and the transformation of an individual’s socio-cultural mindset (Kloosterman & Rath 2000). However, it would be erroneous to study immigrant entrepreneurs in isolation from the culture and economy of the country of their immigration. The integration of the immigrant entrepreneurs in the new socio-economic environment stems from the development of their human capital (Sjaastad 1962). The process of immigrants’ self-employment is positively influenced by the host culture and adjusted by the immigrant’s social status and experience (Aldrich 1975; Ward 1987). On the other side, current difficulties at work (e.g. unemployment) or private life (e.g. family background) in the home country of an immigrant entrepreneur could be a starting motive for his or her immigration and self-employment in the host country (Labianidis & Hatzikopion 2010).

4. Methodology

This paper is based on the publications focusing on entrepreneurship education, educational programmes in the EU, inclusive employability of immigrants and minor groups of the population (Roberts, 1997). Benchmarking is another method that will be used in order to evaluate the effectiveness of the planned programme (Myers & Avison, 2002). The project is introduced as a case study (Yin, 2014). Case study as a research method is widely used in qualitative studies and it provides a critical continuous analysis of a studied object (Baxter & Jack, 2008). As a result, a researcher can consider the process or an organisation holistically (Yin, 2014).

5. Entrepreneurial path to working life – entreetelä-savo – program content of the first training

The first training programme in the spring 2016 was divided into three comparable stages, with slightly different and still complementary meaning. The first stage lasted for two months and included the overall introduction to the practical field of entrepreneurship aimed at uniting the Finnish and immigrant students. In the descriptive, case-based way, it was first presented what entrepreneurship represents and what makes up an entrepreneurial attitude. The entrepreneurship-driven introduction part was developed further by the training sessions about business
cultures in general and the Finnish business culture in particular. It needs to be pointed out that the introduction of the Finnish business norms and values are aimed primarily on the immigrant students, even though instructed in Finnish.

Since a certain part of the immigrant students required training in their professional Finnish language, two workshops on Business Finnish were organized. However, such classes were not purely language classes: participants with the immigrant background practiced in presenting their business ideas, improving their negotiation skills. The first stage ended with the presentation of the students’ refined business ideas in a way of the extended elevator pitch. During the whole first stage, the students worked as a sole team without any kind of discrimination or segregation in the training process. One of the major objectives during the first stage was to unify the diverse backgrounds of the students with the Finnish and immigrant backgrounds.

In addition to the general training sessions and workshops during the first stage, each participant could choose one hour of personal guidance with one of the trainers and discuss his or her business idea and plans of the productization of such an idea. In addition, all the participants developed their individual study plans where they described their current strengths and development needs, presented their professional and educational backgrounds, and expressed their wishes in relation to their learning habits and needs.

The second stage was planned to last for two months with the major focus on the development of the participants’ individual business plans. The workshops organized by the local trainers were supplemented by the training sessions of the business professionals in the fields of finance, budgeting, pricing, business law, e-marketing and support in establishing new enterprises. During the first two sessions in the second stage, the participants became familiar with the transfer process from their business ideas to functional business plans. An active use of online business services with the possibilities to register and draw one’s own business plan using the online forms were widely presented by the trainers.

The economics and business block of the second stage was represented by the following areas of knowledge: economic planning and budgeting, budget control, cost management, taxation and tax system, pricing, debt collection, invoicing etc. It should be emphasized that the economic sessions were given not consecutively but during the whole second stage in order to unite the economic training needs of the participants with other supplementary marketing and sales needs.

Another significant module of the topics in the second stage represents required marketing and sales processes that start prior to the existence of an enterprise. The participants trained their skills in marketing, market competition, customer segmentation, marketing planning and marketing communication, social media, and e-marketing. In addition, the participants identified and analysed their competitors in the market and facilitate sales planning in their current or potential enterprises. As a culmination of the learned marketing skills, the participants did sales exercises developing their unique sales policies in accordance with the marketing strategy.

Apart from the economic and marketing modules, the participants of the program became acquainted with the existing interest groups that influence the entrepreneurship process. The legal aspects of starting and running an enterprise were
trained with the help of a consultant of a juridical agency. In addition, the aspects of work security, one’s own management, and an entrepreneur’s unemployment were presented to the study group.

By the end of the second stage, it was expected that the participants would be capable of planning their enterprises’ activities and run their businesses effectively. It needs to be stated that individual guiding was organized two times for each participant since the development of a business plan required more competences and advice.

A final forum was held in the last session of the second stage in order to give a floor to the participants to prove the feasibility of their business plans. In order to make the assessment more objective, a professional panel of a jury composed of leaders of new business centre, business accelerators and support organizations that help local entrepreneurs in the South-Savo region of Finland was be invited. The participants of the program were also encouraged to provide peer evaluation to their colleagues.

The third stage of the program lasted for one month and had the summative meaning incorporating all the previously learned skills, and moving it to a yet more practical level. At the beginning of this stage, the participants needed to revise their business plans in accordance with the recommendations made by the evaluating board in the previous stage. Another topic was enterprise finance. In addition to business planning and financial competences, participants came closer to an understanding of how to set up a company, register it, and start working as an entrepreneur by studying necessary electronic forms and enterprise documents. In the end of the third stage, a business camp was organized where the participants together with their trainers exchanged the final feedback about the enterprises’ foundation. During the third stage, the participants had several opportunities for individual counselling. In conclusion, these three stages were interdependent, practically oriented and facilitated by multiple professionals in terms of both business training and entrepreneurship activity.

6. Impact and implications for practice

The implications for practice of this research can be based on the novelty and value added of the project. In the present project, entrepreneurship is offered as a potential option for educated immigrants and native Finns who are currently living in the South Savo region. The new-type model of entrepreneurship coaching was piloted in the project.

An idea behind the training is to grow the participants’ entrepreneurial mindset, competences, and skills of being entrepreneurs through a phased training process (Mayson and Harvey, 2013). The participants learned how to act in the role of entrepreneurs. At the same time, the immigrant participants got help in their integration in to the South Savo region. The aim was to increase the integration of the participants during the programme by having the two groups together and gradually also develop the intercultural skills and attitudes of the participants. At its best, such an interaction brought new ideas and economic opportunities, which in turn could
contribute to the growth of other already existing skills of the participants (e.g. in relation to reaching customers and mapping markets) (Alvarez & Barney, 2013; Congregado et al., 2012). The participants had an excellent opportunity to get familiar with one another and widen their networks, which are highly important for both groups, but especially for the immigrants.

It should be stated that more training programs with the primary focus on small groups of Finnish and immigrant participants are expected to be organized in the spring 2017. In particular, more personalized coaching and training will be given to each participant. The participants will work more on evaluation of their peer business ideas and thus contribute to better learning.

7. Results of the first training

As for the results of the present project, the participants (22 people from the Mikkeli region – including Mikkeli city and adjacent satellite areas) increased the readiness to act as entrepreneurs as well as their up-to-date knowledge about the activities of an enterprise and its development was anticipated. In addition, it was expected that the participants would successfully network with the regional entrepreneurs and organisations that support the entrepreneurship development during the project. During the training programme or within a year after the termination of the project, it is expected that at least 8 persons of all the participants will have started their own businesses.

In addition, one of the results was an analysis of the intensified collaboration of the higher education institutions and other parties involved in the development of entrepreneurship in the South-Savo region.

8. Contributions and conclusion

There are the following contributions of the present paper. The facilitation of better training for the skilled workforce is analysed. One of the measures of the regional programme of South Savo 2014-2017 is “skilled workforce and good innovation environment”, which aims at ensuring the availability of skilled workforce (Etelä-Savo–Ohjelma. Maakuntaohjelma vuosille 2014-2017, 2014). Secondly, the aspects of the regional and national sustainability are considered. The sustainability of the region is influenced by working life and education. Therefore, it can be stated that the role of continuing education will be more significant in the future. In addition, by the means of retraining, the workforce and work confront each other better. Thirdly, the cooperation between educational institutions and enterprises is discussed.

The intensification of the collaboration between the higher education institutions and enterprises is emphasised in the regional programme. The productivity of the region is considered as the increased opportunities for the employment for both the domestic and incoming workforce. All the challenges mentioned earlier are contemplated in this particular project, the utmost goal being
the development of the entrepreneurial competences of the participants, and the long-
term sustainability and increased competitiveness of the region.

The long-term opportunities of the highly educated citizens of the South-Savo
region to become entrepreneurs were taken into account. In addition, the South-Savo
region was considered as an attractive place for educated immigrants who could be
fully integrated in the region based on their self-employment. Therefore, the
developmental needs of the region were discussed. Finally, the issues of
sustainability, competitiveness and possibilities for employment of the region by
means of development of entrepreneurship were considered.

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FACILITATING LEARNING IN THE INTERNATIONAL TEACHER-STUDENT ENVIRONMENT: INTERNATIONAL PROJECT “INNOVATIVE ENTREPRENEURSHIP EDUCATION IN NORDIC-RUSSIAN CONTEXT”

Marja-Liisa Kakkonen & Mikhail Nemilentsev
University of Jyväskylä

Abstract: The purpose of this paper is to tell about the achieved results and to disseminate knowledge generated during the two-year international project “Innovative entrepreneurship in Nordic-Russian context”. The results aim at increasing the long-term value of the project by focusing on the future cooperation between the four higher educational institutions (HEIs) from Finland, Denmark and Russian Federation. Another objective of the present study is to ensure the sharing of new knowledge at an international level and to analyse ways of increasing the innovative competences of teachers and students through continued training and exchange during and beyond the project period. In particular, future cooperation of the project partners is discussed.

Keywords: entrepreneurship education; innovative pedagogy; Nordic-Russian context; student competences; teacher competences

1. Introduction

This paper describes the project that was implemented between two Nordic and two Russian HEI partners in 2013-2015 (project NCM-RU/10088 “Innovative entrepreneurship in Nordic-Russian context”). The main goal of the project was to strengthen the network among the partners as well as to strengthen the co-operation between the higher education institutions involved and with their industry partners in Russia and the Nordic countries. The specific objectives of the project were to promote students’ skills to reflect on innovations and to enhance their entrepreneurial mindset, to train students’ understanding of the value creation for customers and markets, and to increase the entrepreneurial teaching competences of teachers. The project started in July 2013 and ended in June 2015.

The added value of the project was that the network of partners, Mikkeli University of Applied Sciences (Mamk), St. Petersburg State Forest Technical University (FTU), St. Petersburg State Technological University of Plant Polymers
(PPU) and Tietgen Business College (EAL), has a diversity of approaches in the entrepreneurship education, and they were willing to share their practices with each other, and learn and create more together. Denmark and Finland represent a long history in entrepreneurship and entrepreneurship education. Russia, in turn, contributes a new and fresh drive in entrepreneurship which has increased rapidly especially during the last two decades. By combining these different approaches and development phases in the entrepreneurship education and innovation training, the project created added value and provided new learning opportunities for all the partners in the network. In addition, the Finnish partner was used to working with the Danish partner as well as with the Russian partners. The new dimension of the collaboration was a joint Danish-Finnish-Russian team. The project was implemented by arranging seven events (main activities) of which four were arranged only for the teachers and staff members, and three were arranged for both the teachers and students. This article describes all the activities of the project as well as the outcomes and the results of the project.

2. Brief description of the project activities

The project included seven seminars as the main activities of the project during two years – one teacher training and one joint seminar for teachers and students were organized in each partner country (Kakkonen 2015 b). In addition, the final seminar was arranged in Mikkeli in May 2015.

The first activity of the project included a workshop and a seminar with three intensive days at Mikkeli University of Applied Sciences in August 2013. The theme of the seminar was bridging entrepreneurship education between Russia and Nordic countries. During the seminar, the participants learnt different aspects related to the entrepreneurship education in higher education, and they became familiar with each other better. In addition, two teachers were invited to give presentations on cultural aspects. Both of them are experts on inter-cultural communication. Other teachers from Finland, Denmark, and Russia participated in these sessions of understanding cultural differences.

The second activity was a teacher training session that was arranged by the EAL Competence centre in Odense, Denmark. It was organized in January 2014. The theme of the training was Innovation pedagogy aimed at developing teachers’ pedagogical skills by means of creative exercises and games. Environmental elements required for innovative activities were studied.

The third activity was a joint workshop for students and teachers that took place in Odense in April 2014. The main theme of the event was "Training innovative entrepreneurship in intercultural context", and it included a workshop and a seminar. One local company was involved. The workshop was organized in April 2014.

The fourth activity was a teacher training seminar that focused on the exchange of the innovation methods of entrepreneurship training in the partner universities. It was organized in Mikkeli in September 2014, and it represented an extra activity in addition to the originally planned six project activities in accordance
with the project application. The main theme of this activity was sharing of experiences in innovative entrepreneurship education in the partner universities. It should be pointed out that the fourth activity took place due to the cost effectiveness of the partners in the previous activities of the project.

The fifth activity was a teacher training seminar organised in October 2014 in Saint Petersburg. The theme of the training was Intercultural Communication. During a three-day seminar, founding blocks of intercultural communication and principles of innovative entrepreneurship education were discussed. Partners from Finland and Denmark became familiar with the aspects of the business culture in Russia, and particularly the development needs of the Russian economy. They socialized during daily and evening cultural activities and strengthened the partner networking by learning the Russian, Finnish and Danish standards of entrepreneurship education.

The sixth activity organised in St. Petersburg in February 2015 was the third joint activity in accordance with the international NORU project. The teachers and students from three partner countries – Denmark, Finland and Russia – developed their skills in intercultural communication and learned the Russian business culture in the settings of two partner universities in St. Petersburg. During a three-day project activity in Saint Petersburg. The Russian partners chose the same topic as in October 2014, but this time they focused more on the practical issues of the intercultural communication rather than on the theoretical issues.

The seventh activity – the final seminar of the project – was arranged in Mikkeli in May 2015. The final seminar was organized for three days. The aim of the final meeting was, to sum up the results of the project, to analyse the results achieved, and to discuss the further steps of the cooperation in the frame of innovation entrepreneurship. There were also external lecturers who provided insight into two more challenging topics in the entrepreneurship education: students’ inner growth to entrepreneurship and coaching creativity.

3. Methodology

The research methodology of this paper is based on the qualitative method (Mason, 2002; Maykut & Morehouse, 1994) and in particular on the examination (Robson, 2002) of the publications about the project relating to the project structure, the achievement of the main and specific goals and objectives, as well as the topics related to teaching and studying entrepreneurship in the intercultural context will be qualitatively analysed (Walford, 1998; Woods, 1996). It is worth emphasizing that a number of articles and reports was written during the project by the authors of this paper. These publications are thus utilized in this paper to a large extent.

In particular, the assessment of all the project activities by the participants was analysed (Kakkonen 2015a). In addition, the project implementation was analysed in the Nordic-Russian context (Kakkonen 2015b). The achievement of the project objectives was assessed from the perspectives of the teachers and students (Kakkonen & Nemilentsev 2015a, b). The project was also self-evaluated by the steering group (Kakkonen et al. 2015). Finally, the project’s added-value and overall
evaluation were analysed by means of the project’s final report (Nordic-Russian Cooperation Programme 2013-2015. Final Report 2015).

The participants (i.e. both the teachers and students) assessed and gave feedback on the events. The assessment process had to be systematic, transparent and critical. (Suopajärvi 2013, 9). In order to understand how the participants found the seminar, all in all, feedback was collected at the end of each seminar and it was discussed in the final seminar (Kakkonen 2015 a). The data were collected from each participant in the closing session of each seminar. A questionnaire form was used to gather the feedback. The questionnaire form consisted of eight items and the participants were asked to evaluate with the Likert scale (1-5) the following issues of the seminar: programme, organization of the seminar, dissemination of information, materials, scheduling and timing, atmosphere, social programme, and networking. The numeric data were analysed in the Excel software and the frequencies and means are reported. The results focus on the teacher and student participants.

In addition, the project manager sent an inquiry to the coordinators of each partner university. They were asked to reply by email directly how the main goal and the specific objectives were achieved from their point of view. They were also asked to give arguments and examples for their answers related to each objective. In addition, the project manager discussed these matters with the local teachers involved in Mikkeli and wrote a memo based on the discussions. All the texts were combined before the data analysis. The data were analysed by a content analysis and the main themes were identified from the data by each question.

4. Outcomes of the project

4.1 Feedback of the participants

In general, the feedback from the teachers on all the seminars was great. All the aspects, which were asked to be assessed, were rated as very good or excellent in each seminar. In addition, there were only small differences in the scores between the seminars arranged during the project. In other words, the participants were very satisfied with the seminars and how the seminars had been arranged. Table 1 presents the scores of each aspect and the comparison of the scores between the seminars.
Table 1. Feedback from the teachers

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<td>4.75</td>
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<td>3.8</td>
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<td>4.27</td>
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<td>4.83</td>
<td>4.67</td>
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The students took part in one workshop in Mikkeli (August 2013), in one workshop in Odense (April 2014), and in one in St. Petersburg (February 2014). It is worth mentioning that the content, the theme, and the methods varied to some extent in each seminar. Also, the participating students were different (except for two students).

Some parts of the programme were the same and together with the teachers, but the main part of the students’ programme was to study; to learn by doing. The basic idea of the programme was the same in Mikkeli, Odense and St. Petersburg: the students worked together in multicultural student groups on an assignment for a local company. They were supposed to work in a very intensive way, and quite innovative teaching methods were used in supporting their learning. It varied a lot from the traditional teaching sessions of higher education. The results from the students were also good or very good. However, the scores were a bit lower than the results from the teachers/professors. Table 2 introduces the feedback from the students.

Table 2. Feedback from the students (as means of the statements)
4.2 Mobility

The mobility of the project was active. According to the project plan, three staff members travel and take part in six seminars. In fact, the number of the participants was bigger in these seminars. Further, there was one additional seminar (instead of six, seven seminars were organized during the project). Therefore, the total number of the mobility was higher than planned (Nordic-Russian Cooperation Programme 2013-2015. Final Report 2015). According to the project plan, students participate in three seminars: in Mikkeli, Odense, and St. Petersburg. Table 3 illustrates the mobility of the project in detail. It is worth mentioning that 2-4 students and teachers of the host university took part in the seminars: the local students took part in the whole student project, and the local staff members participated in the programme during 1-3 days (Kakkonen et al. 2015).

Table 3. Activities and mobility of the project

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4.3 Project publication in dissemination of the project results

Between 2013 and 2015, 33 project publications including 3 books and 30 refereed research articles or papers of good practices were published by the teachers and students of the partner HEIs. The publications were presented by the authors in the organised small-scale conferences or workshops during the project seminars.

The following topics were most often discussed in the publications: innovativeness in learning and guiding, innovative camps, business and entrepreneurship training, innovative approaches in teaching, innovative methods and tools in teaching in the Nordic-Russian context, intercultural teaching and learning environment, intercultural differences in learning innovation etc. (Nordic-Russian Cooperation Programme 2013-2015. Final Report 2015).

4.4 The achievement of the project objectives from the perspective of the teachers

Practical implications of the project can be evaluated through the attainment of the project’s main goal and three specific objectives. The achievement of the project’s main goal was ensured by arranging multicultural and international seminars for the Finnish, Danish and Russian students and the professors. The attainment of the project’s specific objectives was examined by a qualitative study (Kakkonen & Nemilentsev 2015a).

The following two main themes were identified related to the main goal: Inter-university collaboration and Networking inside the university. The answers related to the specific objective of learning of teaching competences were analysed and reported according to the third theme of Development of entrepreneurial teaching competences. In order to understand the findings better in their context, the universities are mentioned by their real names.

Inter-university collaboration

The main goal was achieved and the inter-university collaboration developed between the partners as follows. At the first level of the whole network, which consists of one Finnish HEI (MAMK), one Danish HEI (EAL) and two Russian HEIs (FTU and PPU), was continuously developed during the two-year NORU project. The partners attained a synergy effect of innovative approaches to teaching and learning in HEIs, rather than focused solely on intercultural differences in the education systems. At the second level of the collaboration between the Danish and Russian partner HEIs, EAL succeeded in increasing the student and staff mobility with the Finnish and Russian partners. In turn, two Russian partner HEIs became acquainted with the Danish colleagues. At the third level of the collaboration between the Russian partners, both FTU and PPU acted as one team and achieved a closer cooperation with the Finnish and Danish colleagues despite the visible differences in the education programmes and specialities. (Kakkonen & Nemilentsev 2015a.)

Strengthening international networking inside each university
Besides strengthening the inter-university collaboration between the partners, the international networking inside each university was also strengthened clearly (Kakkonen & Nemilentsev 2015a). MAMK bridged the developed approaches to the innovation and entrepreneurship education that exists in Finland, Denmark and Russia. Additionally, an intercultural entrepreneurial mindset of the teachers and staff members at MAMK was further improved with the help of the partners from Denmark and Russia. As for EAL, this project raised a greater intercultural awareness of the principles of entrepreneurial thinking and acting in an innovative way. Two Russian partners acted jointly during the whole period of the project. As a result, FTU and PPU created a basis for future cooperation in the field of entrepreneurship education. The teachers and staff members of FTU and PPU improved their skills in working in multicultural groups and their academic writing skills. As the main achievement for the Russian partners, the project results were disseminated in the curriculum of the Russian partner HEIs.

**Development of entrepreneurial teaching competences**

Based on the findings of this qualitative study, the entrepreneurial teaching competences of the teachers from four partner HEIs were developed at three levels: a) the level of knowledge; b) the level of skills (i.e. methods and approaches); and c) the level of entrepreneurial mindset (Kakkonen & Nemilentsev 2015a). These are presented in detail below.

*Level of knowledge*

During the project, the teachers acquired a greater and deeper knowledge of the state of entrepreneurship education, business and society in the partner countries. The participants were inspired by the alternative innovative pedagogical methodologies to foster innovation and the entrepreneurial spirit of the students. The teachers gained professional knowledge about changing the physical setting as well as setting in communication and innovative development for achieving better results in entrepreneurship teaching. For instance, the Finnish and Russian colleagues acquired a greater knowledge about the unification of the campus university education with the industry by means of progressive ICT tools in Denmark. Additionally, with the help of the Russian partner HEIs, the participating Finnish and Danish teachers' understanding of the intercultural communication process improved greatly.

*Level of skills (i.e. methods and approaches)*

The teachers of MAMK, EAL, FTU, and PPU learned not only how to teach innovatively, but also how to learn innovatively while being teachers. The teachers' creative approaches to the innovation-driven entrepreneurship education in the multicultural groups were mutually developed during all the project activities. For example, the TAMS method was developed by the Finnish and Russian colleagues to develop students' competences of team building and increase their leadership skills by putting them in the role of decision makers in a business environment. Additionally, the skills of hands-on and minds-on experience were developed by the Danish partners by means of Lego bricks and Lego ® Serious Play ® method. Additionally, the teachers have improved their cultural awareness, an ability to
synthesize, to exploit information process and set goals through art during the training "Expressive methods in art" during the training session in St. Petersburg.

**Level of entrepreneurial mindset**

The teachers’ entrepreneurial mindset was greatly developed during the project. The teachers changed their role in a teaching process and became mentors in the entrepreneurship education ‘for entrepreneurship’ (instead of just assigning students a passive role during lectures). A creation of teachers’ new entrepreneurship mindset was aligned with learning creative entrepreneurial methods (e.g. TIPI concept) and gaining innovative skills. The practical examples of the “university-industry” collaboration organised by the Danish and Finnish colleagues featured the dynamic entrepreneurship and innovation environment of a new entrepreneurial mindset.

In conclusion, it can be argued that the main goal of the project (i.e. to strengthen the network of the four partners) was achieved well. The special objective, related to the development of teaching competences of teachers, was also fully attained. Based on the findings, it was achieved at three levels: the level of knowledge, skills, and mindset of the teachers. All in all, it can be concluded that the project was a success in terms of the achievement of the objectives from the perspective of the teachers.

### 4.5 Achievement of the project objectives from the perspective of the students

Two of the specific objectives of the project were related to the students’ learning. The objectives were formulated as follows: firstly, to promote the students’ skills to reflect on innovations, and to enhance their entrepreneurial mindset, and secondly, to train the students’ understanding of value creation for customers and markets (Kakkonen & Nemilentsev 2015b). How these objectives were achieved was examined by an inquiry sent to the national contact persons of each partner university of the project who were also the members of the steering group of the project. They were asked to discuss with their colleagues who have taken part in the project and then, to answer the questions and to give arguments and examples for each question. The data were combined and analysed as a whole text by a content analysis. The findings regarding the two objectives are reported on the following pages.

**Development of students’ innovative skills and entrepreneurial mindset**

The participating students acquired intercultural knowledge of the entrepreneurship systems in the partner countries, and developed their entrepreneurial mindset by means of various creative methods of teaching and learning at three interconnected levels: a) the level of students’ knowledge; b) the level of students’ skills; and c) the level of students’ mindset (i.e. students’ beliefs and value system feature by the entrepreneurial mindset) (Kakkonen & Nemilentsev 2015b). These three levels are presented in detail.

**Level of students’ knowledge**

The students gained knowledge about the innovative processes, working in cross-cultural teams and value creation. In order to improve their intercultural
knowledge, the students focused on the intercultural habits, behaviour, attitudes, values, business traditions and etiquette in the intergroup entrepreneurial work.

**Level of students’ skills**

The students developed skills in generating, evaluating and conceptualizing ideas in practice, and handling challenges when working in cross-cultural teams. For instance, the students’ intercultural learning skills were trained during the 24-hour innovative challenge organised by MAMK, Lego Serious Play® method presented by EAL, and the method of fully active references presented by FTU and PPU.

**Level of students’ mindset (i.e. belief)**

During working in the multicultural teams, the students enhanced their entrepreneurial mindset. At the same time the students were supposed not only to think about their own new ideas, but that the ideas were also applicable in the business, and therefore the initiatives were expected to create an added value to some extent for the company’s customers and markets, which was the second specific objective of the project. For example, the students' entrepreneurial mindset and innovative competences were also developed during the workshop "From idea to innovation" organised by MAMK.

**Development of students’ understanding of value creation for customers and markets**

During the NORU project, the students learned to identify sources and opportunities for value creation for end-users and business customers at various levels. The three identified levels are as follows: a) the level of students’ knowledge; b) the level of students’ skills; and c) the level of students’ mindset (i.e. students’ beliefs and value system feature by the entrepreneurial mindset) (Kakkonen & Nemilentsév 2015b). These three levels are presented in more detail further.

**Level of students’ knowledge**

The students received practical knowledge about the innovation process and entrepreneurship systems of Finland, Denmark and Russia by means of their personal engagement in the organised project cases and activities. For instance, the Inno-Event organised by EAL helped the students to create an innovative platform for mutually beneficial collaboration between the students and business. Additionally, the students acquired knowledge about the nature of innovative processes and opportunities for value creation in a multicultural environment.

**Level of students’ skills**

Innovative skills of the students were developed during every project activity at MAMK, EAL, FTU, and PPU. For example, in the 24-hour innovative camp at MAMK, the students learned how to negotiate in multicultural teams under the mentorship of the Danish and Finnish teachers. In addition, with the use of Lego® Serious Play® method in EAL, the students increased their innovation and business performance as well as widened their design and story-telling experience for business tasks.

**Level of students’ mindset (i.e. belief)**

The students’ system of belief and their entrepreneurial mindset was developed in a close collaboration with the industry stakeholders (i.e. the 24-hour challenge was organised by MAMK, and the Inno-Event arranged by EAL). A new formed mindset of the students enabled their personal and professional development,
a better assimilation of the presented creative methods and practices of the entrepreneurship education.

It can be concluded that although the objectives were achieved well, there are still some aspects to be considered in the future. For example, it might be important to give enough information about the methods and processes in advance and prepare the participating students better for these innovative learning experiences due to the diverse backgrounds of the participating students in terms of their readiness for innovative learning methods.

5 Summary and conclusions

This paper describes the project “Innovative entrepreneurship in Nordic-Russian context” and its results. The mutual benefit from the achieved results by the four project partners could be measured through the attainment of the project’s main and specific goals. The main goal was achieved and the inter-university collaboration developed between the partners as follows: The Inter-university collaboration in the project emerged or developed at different levels: a) between MAMK, EAL, PPU, and FTU (the whole network); b) between EAL, PPU and FTU (Danish and Russian partners), between MAMK and EAL, and between MAMK and the Russian partners; and c) between PPU and FTU (Russian partners).

In order to sum up, the project was successful in many ways. The major achievements are listed below:

- feedback of the participants collected and analysed
- good outcomes (e.g. publications, mobility)
- achievement of the planned objectives.

Therefore, a continuous project was applied and it received funding. The new project is a one-year project and it will go deeper in the innovative pedagogy with the same composition of project partners. The results of the project will be presented in December 2016.

6. References


Abstract: People with disabilities have the same motivations to travel as the rest of the community. However, they often face a range of constraints and barriers. A really economically relevant market segment is the one related to accessible activities, oriented to tourists with certain disabilities. The word disability may be misleading because only around 5% of disabled people are wheelchair users. Most blind and vision-impaired people do not have sufficient residual sight to permit travelling safely and independently. Suitable facilities that may meet their needs are a solution. In this paper, a project related to create accessible tourism facilities in a mountain resort is described. This project also has invited students to think out of the box and work towards problem solving in the world of social inclusion.

Keywords: Accessible tourism. Ill-sighted tourist. Europe 2020. Social inclusion. Assistive technology.

1. Introduction

1.1. The Europe 2020 strategy.

Europe faces a moment of transformation. The crisis has wiped out years of economic and social progress and exposed structural weaknesses in internal economy. But Europe has many strengths too, the ability to count on the talent and creativity of people, a strong industrial base, a brilliant services sector, a single market and common currency.

Europe is able to exit from the crisis adapting its economies and societies by taking new actions. This is the reason the European Union (EU) took charge of its future with the Europe 2020 program, a growth strategy for the coming decade (EU-Committee of the Regions 2012). This program is founded on the main concepts of a smart, sustainable and inclusive economy (Commission Communication 2010). Smart is an economy based on knowledge and innovation. This requires making full use of Information and Communication Technologies (ICTs) and ensuring that...
innovative ideas can be turned into new products and services, to create growth and quality jobs.

Sustainable means an economy based on a more efficient, greener and competitive use of the resources, to develop new processes and technologies. In doing so, it is fundamental to use electronic systems and information tools. Inclusive refers to the importance for the benefits of economic growth to spread to all parts of the EU, thus strengthening the territorial cohesion.

As we pointed out, innovation is always central to staying competitive in a rapidly changing world. Europe’s competitiveness and its capacity to create new jobs strongly depends on the ability to introduce innovation into products, services, businesses, and organisations. Smart specialisation shall also ensure a more effective and complementary use of the EU, national, regional and local funds for urban and regional development, research and innovation.

These actions require a focus on user needs and market opportunities.

1.2. Accessible tourism for visually impaired people.

In the current business environment, tourism has become a powerful economic activity. The main reason is that this is one of the main sources of employment and, in this context, the EU can play a principal role, as prime tourist destination of the world.

The importance of tourism, frequently underappreciated, extends well beyond transportation and hospitality. In effect, tourists make purchases from different businesses, most of which are also available to local residents. Tourism (and travel) economy in 2011 was 9% of global Gross Domestic Product (GDP) and accounted for 255 million jobs (WTTC 2012). Over the next ten years, this industry is expected to grow by an average of 4% annually, taking it to 10% of global GDP. By 2022, it is anticipated that it will account for 328 million jobs or 1 in every 10 jobs on the planet.

Tourism is frequently oriented towards segmentation as a way to provide better service to specific tourist groups, who are differentiated by demographic and psychographic characteristics. A significant example is the one known as “grey tourism” (seniors tourism), which emerges as the most interesting segment, depending on the population ageing. The European population is aging: by 2050 the number of people over 65 will be 3 times what it was in 2003, and the number of over 80s will have multiplied by 5. These figures represent a huge market potential, which today remains vastly underserved.

But other sectors are also relevant. For most of us, the holidays are a good period to spend outside home, but many people have access needs, which can become huge obstacles. People with disabilities have the same motivations to travel as the rest of the population; however, they have to be skilled researchers, just to find out if they’ll be able to have the possibility to go somewhere without insurmountable problems. Although many different public facilities and tourist locations have made
efforts to cater to all people, often they find it challenging, if not impossible, to experience a place as others might.

According to the UN, an estimated 650 million people in the world have disabilities. Together with their families, this means that approximately 2 billion people (almost a third of the world’s population) are directly affected by disability.

Human disabilities have some social aspects because frequently they are the disabling environment and adverse social attitudes that create a disability, rather than a physical impairment (United Nations – Economic and Social Commission for Asia and the Pacific 2003). Tourism is part of the social relations in each country, it is so important to analyse all the strategies able to provide barrier-free tourism to be developed.

A more accessible tourism, for all, is a social responsibility, but also a compelling business. Many examples show that making basic adjustments to a facility, providing accurate information, and understanding the needs of disabled people can result in increased visitor numbers. The accessibility is frequently perceived by business as a burden, even if travelling and having full access to tourist activities, services and facilities is a right enshrined in Article 9 of the UN Convention on the Rights of People with Disabilities (United Nations – Enable 2013), signed by the European Union and its 27 Member States (European Commission – Justice 2013).

The word disability, however, may be misleading, because only around 5% of disabled people are wheelchair users, while others have different kinds of problems. According to the World Health Organization (WHO), there are about 285 million people in the world who are visually impaired: 39 million are blind and 246 million have low vision (WHO 2012). In the EU only more than 7.4 million people are blind or partially sighted. This is a considerable group of people who, up until today, depend greatly on others when going outside home, and who could benefit from systems which will enhance their independence.

In recent years tourism activities showed new interests versus the so-called “accessible tourism” (Westcott 2004, Packer 2008, Buhalis 2010). This is a form of travel especially catered to people with disabilities, where the term accessible refers to the special needs of these people. The primary goal of the accessible tourism movement is to bring the wonders of world travel to individuals who may not otherwise be able to experience them because of a specific disability.

This is an evolving field of academic research and industry practice. As with other areas of tourism, the field is multidisciplinary and is influenced by various disciplines including geography, organizational management, marketing, disability studies, public policy, psychology and local culture.

Accessibility is not a niche. For people with mobility problems, the availability of suitable accommodation is essential to staying at a destination (Turco 1998). Quite simply, if they cannot find barrier-free accommodation then they will not travel to the destination. Given the ageing of the population, the known and potential travel patterns of people with disabilities, generally, and people with vision impairment, in particular, there is a viable market. Millions of travellers worldwide are searching, with their families and friends, for places to visit and fun things to do in their leisure time. They just require a little more help in doing so.
1.3. Smart mobility aids for blind people.

The help refers to facilitating for everybody to approach, enter and use buildings, outdoor areas, and other facilities, independently. Providing information on accessibility and improving access, benefits a wide range of people who want to travel, but who may find it difficult. Barriers can occur in relation to the surrounding environment of the accommodation (location, proximity to services, public transport, parking, and drop-offs), the reception, other facilities and services, and the rooms.

People who are blind or vision-impaired could get maintaining independence and dignity in environments away from their home they are not familiar with, travelling independently, using different tools and techniques (Packer 2008).

The inability, or reduced ability, to see essentially inhibits, or limits, the possibility to perceive information through sight. Given the fact that this sense is missing, new “communication channels” need to be used to obtain information about the surrounding world. Hearing and touch are the second and third major human senses, respectively, after sight. To help these people, a tool must so transduce visual information to acoustic, vibrational or tactile form.

Most new devices are addressing the problems of character recognition and pictorial representation by means of tactile displays, such as text-telephones with specially designed Braille dot keyboards.

Other devices, such as mobile phones, allow one to write and send sms and e-mails through a voice-recognition system and a voice synthesizer.

Problems related to mobility assistance are more challenging, compared to communication problems, because they involve spatial information of the surrounding environment, orientation, and obstacle avoidance. The most difficult challenges the blinds face, on a daily basis, are getting around in their environment. Common aids are marks on the road to indicate the crosswalk (Figure 1) and acoustic warning signals at the lights to inform when to cross. Tools such as the white cane with a red tip (Figure 1) are daily used to improve mobility. A small number of people employ guide dogs to assist in mobility, that are specifically trained by some specialists to travel safely in the home or on specific routes which they may use often.

Unfortunately, these tools are of reduced utility outside familiar places, such as in the course of a trip. But some other different tools can help them.
Technological advancements are made practically every day, incorporating all aspects of life. Assistive technology to aid blind and partially sighted can increase the individuals’ quality of life. To this aim, various types of technologies are currently available or under development.

As concerning outdoor recreation activities, an example is the one supplied by special ski instructors that use a combination of audio commands to drive a blind skier down the hill (Foresight Ski Guides 2013, Commands 2013). A lightweight, portable amplification system, can help the instructor and skier remain in close communication.

New tools, known as Electronic Travel Aids (ETAs), are under study and development. They try to enhance mobility for blind pedestrian scanning the environment (using different technologies) and transducing the gathered information in a suitable way for a blind. The best known device is an electronic long cane with a built-in ranging system. An ultrasound, radio frequency (RF) or laser signal is emitted and the returning echo, reflected by an obstacle, is translated into an audible signal or a vibration, to inform the user.

The implementation of these systems presents different problems and, at present, no one has been able to design a device that can fully replace the long cane. The problems are not related to the kind of electronic components adopted, but to the architecture of the system. The radar or sonar embodied in the cane makes it difficult to determine "where" things are, a process that can be defined as "spatial sensing". It is not easy, for example, to distinguish between an obstacle, upwards stairs or downwards stairs (Figure 3).
A visual image is rich of information contents (the sight contributes up to 90% of the sum of information that we have about the surrounding world), the translation into sounds of various pitches or tactile vibrations reduces both spatial and time resolutions of supplied information and makes it more difficult to understand the surrounding configuration. Generally, these systems have 3-4 different sounds associated to corresponding distances.

The human ear has relative low capacity of data manipulation compared to the eye. Each ear can process approximately 15 KB/s. The acquisition of low-definition VGA (Video Graphics Array) colour pictures of 24 bits (640 x 480 pixels) at 25 frames per second, require around 100 MB/s to be processed. This means that to convert the frames to sound a 6-7 thousand greater time will be required. The actual conversion is based, obviously, on a reduced quality of the converted image (Cazan 2007) producing so a rough and approximate idea of the place.

The performance of the image to sound conversion can be improved using a larger audio bandwidth. Some devices use the musical scale’s 8 tones to indicate the distance: each tone is associated to a particular distance from the obstacle. The user must wear an earpiece or headphones.

The sonic mobility devices are suitable for outdoor use. Drawbacks are that they can interfere with the listening of normal environmental sounds and may not be used in places with extremely loud noise.

An advanced example of this was demonstrated at Daytona International Speedway in Florida, where a blind man drove a modified Ford Escape Hybrid, as part of a challenge oriented to create non-visual technologies to drive a car (Associated Press 2011, Blind Driver Challenge 2013). The hardware includes special gloves and a seat cushion that both vibrate certain cues that indicate directions to accelerate or halt, turn right or left. The vehicle can “see” obstacles and the road ahead through strategically placed laser range finders and cameras.
Blind people can use portable Global Positioning System (GPS) systems to determine and verify the correct travel route when they are both walking or on a bus. Using GPS technology in conjunction with a structure like public transportation, those with visual disabilities could achieve a more independent lifestyle, even if they should use in addition a particular mobility device, such as a common cane, to detect obstacles.

2. THE PROPOSED PROJECT

2.1. The contribution of the University of L’Aquila.

In recent years the Italian Ministry of Cultural Heritage and Activities has encouraged tourism operators to focus on their understanding and communications of this particular need and to make artistic and cultural itineraries more accessible to all.

The University of L’Aquila constituted the Consortium “La montagna amica” together with a public (Gran Sasso Teramano) and a private (Altevie) company, and a University spin-off (Novatec) with the aim to promote and assist the development of mountain tourism, suitable for disadvantaged persons such as aged and disabled people, Different Engineering Departments related to the Civil, Mechanic, Electric, and Electronic Engineering are involved in these activities. In particular, the main aims of the project have been included in advanced educational activities, as topics for theses at Master level.
A number of students of different Master degrees have been included in the project, for all of which the general objectives have been introduced, presenting the main problems of blind people. After this introduction, the project has been divided in some sub activities and assigned to individual students or teams (generally of two) students. At this point, each activity has been analysed, designing the specific components, with the supervision of the thesis assessors.

The successive step is the on-field test of the implemented prototype in actual operative conditions.

*The project specifications.*

The aim of this first project of the Consortium is to operate in a winter resort, at Prati di Tivo (TE), in Abruzzo, a region in the centre of Italy, creating a special browser for blind pedestrians.

This idea is to create an electronic device that helps visually impaired people enabling them to hike in some small mountain paths. The device, based on the GPS, will be integrated on a mobile phone.

GPS receivers operate measuring the time spent by a RF signal to reach the device from a satellite. A mathematical calculation permits to evaluate the distance between the satellite and the receiver. By determining the distance between four or more satellites, the receiver gets information about its position (latitude, longitude, and height).

The errors introduced by both the GPS satellites and the receiver produce a positional uncertainty. The U.S. government is committed to providing GPS to the civilian community at the performance levels specified in the GPS Standard Positioning Service (SPS) Performance Standard (Dept. of Defense – USA 2008). For example, the GPS signal in space will provide an accuracy of 7.8 meters at a 95% confidence level. But the actual accuracy also depends on other factors, including atmospheric effects and receiver quality.

This performance, acceptable to drive a car along a road, or to bring common people along a mountain path, became hazardous for people with a reduced vision because it could lead them off their path.

Higher accuracy is today available by using GPS in combination with “augmentation systems” (systems that improve the common performance), capable to enable real-time positioning to within a few centimeters. The most important of these techniques is the Differential GPS (DGPS), where an additional correction (differential) signal is added to standard GPS, to improve the accuracy of the actual position. Accuracy is about up to 10 cm in case of the best implementations.

The concept of DGPS is based on using the correlation in ranging errors between a reference station receiver and DGPS user receivers to eliminate co-existing ranging errors in the user ranging measurement. The DGPS uses a fixed, ground-based reference station, which position is computed and compared to the corresponding geodetic position (Figure 4). This station broadcasts the difference between the measured satellite pseudoranges (distance between a satellite and the earth receiver) and actual (internally computed) pseudoranges, in order to permit the receiver to implement the correction. The digital correction signal is broadcast in an operational service radius, centered at the reference station.
This technique has been implemented for special applications, such as the Maritime Differential GPS System, operated by the U.S. Coast Guard for maritime navigation, or the Wide Area Augmentation System (WAAS), operated by the Federal Aviation Administration (FAA) to support aircraft navigation. The Shipboard Relative GPS (SRGPS) is also adopted for automatic shipboard landings of aircraft in zero-visibility conditions.

**Figure 4 - Differential GPS positioning.**

The implemented DGPS systems are used in conjunction with an already uploaded map, to determine the actual location.

The first step of the project is to define some mountain paths, whilst creating a corresponding electronic map. This is to provide accurate and reliable information about roads, trails, tours, itineraries, and general points of interest, and also GPS tracks for outdoor navigators, by geographic coordinates. Technical details of the route, the description, the map, the altimetry are also supplied. In this way, these people may go through paths, trails, and itineraries with the security of never losing their route.

Once the travel ways are identified, the project foresees a first phase of investigation on the spot of the travel itineraries, in order to measure the absolute position of one point using the differentiated high precision GPS system.
The GPS receiver installed at the reference point is a standard system with an outdoor antenna (Figure 6). Through a system of micro-processing, the differentiated GPS technique will constantly, instant per instant, define and re-define the position.

In order to keep the ill-sighted person on the right track, we plan to use two vibrating bracelets, together with a blind stick or a blind dog.

As a second step, we plan the possibility to use a system that monitors the vital parameters, to automatically manage an alarm in case of problems. Finally, in order to make a more pleasant trip, it will be possible to add to the system a narrating voice that will inform the ill-sighted about the path he is following, the nature around him etc.
2.2. Transfer of learning.

This project can be also examined from the point of view of the “transfer of learning” methodology (Jones A. 2013). This methodology says that in every type of learning, be it scholastic or other, apprentices make use of earlier acquired knowledge and/or experience when they find themselves in a new and unknown surrounding, where they are supposed to acquire new knowledge and experiences. If there were no transfer, for example, learners would need to be taught every act that they would ever perform in any situation.

Students, for example, are able to identify a certain context in which they can apply earlier acquired knowledge. Moreover, if they are able to link the learning to a future experience, their learning process will improve.

The transfer of learning takes the shape of “experiential learning”, which is a model of education. Kolb’s Experiential Learning Theory (Kolb 1984) defines experiential learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience.

![Kolb's experiential learning theory](image)

Figure 7 - Kolb's experiential learning theory

As reported in Figure 7, the cycle begins with a concrete experience that the learners have had, followed by an opportunity to reflect on that experience. Then they may conceptualize and draw conclusions about what they experienced and observed, leading to future actions in which they will experiment with different behaviours. The student’s participating in this project gained experience in the implementation of a new economic program with huge social effects. The adopted approach can be successfully applied in other contexts. For instance, capability to work in team with students of different specializations is a major skill for engineers. Moreover, this project has invited them to think out of the box and work towards problem solving in the world of social inclusion.

To illustrate the positive effect the first project had, it is interesting to know that currently these students, who by now have got their diploma, are setting up a new company involving young engineers for a different kind of application involving
social effects. More specifically, they are working on an automatic system for the 
home monitoring of vital parameters (e.g. heartbeat, blood pressure, body 
temperature) of aged people affected by different kinds of illnesses. The system 
interacts with all home appliances (e.g. lights, heating, window blinds controllers) to 
help these people to improve their well-being.

In order to start up this new initiative, the students repeated the same 
methodology they used in the first project: they analysed the economic aspect of the 
market, studied the state of art of ICT technology applied in this field, analysed the 
point of view of these special users, and implemented a prototype.

3. Conclusion

People with disabilities have strong motivations to travel even if they face a range of 
constraints and barriers. Orientation and mobility are the main problem they generally 
have to face. An improvement in the ability to move, also in the surroundings, is 
important to promote an independent lifestyle.

In this paper, we described a project that can affect the daily life and the 
tourist activities of the visually impaired positively. Not only can this system be of 
use can during a trip, but it can be widely used in the daily life and the general feeling 
of well-being of the ill-sighted can grow from it.

This project also has invited students to think out of the box and work 
towards problem solving in the world of social inclusion.

Of course, this is only a drop in the ocean, but we hope this project will be an 
active encouragement for many initiatives that can improve the independence of 
disabled travellers.

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