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A Comparative Study of Staff Perspectives on Design Based Learning in Engineering Education

Sivachandran Chandrasekaran, Guy Littlefair, Matthew Joordens, Alex Stojcevski
(School of Engineering, Deakin University, Geelong, Australia)

Abstract: The responsibility of staff is to review student learning and teaching practice, formulate goals to strengthen teaching practice, establish personal development, peer to peer learning and promote their work integrity. Industry expects graduate engineers to articulate engineering design problems with career-equipped skills such as problem solving, creativity, innovation, communication and project management. The question is, whether current curriculum practice does help graduate students to achieve and practice engineering skills expected by employers? For many decades, engineering educators have implemented many learning and teaching approaches such as project-based learning, problem based learning, design based learning in order to train students as professional engineers. Nonetheless, there is still a gap exits between students learning outcomes and the teaching practice. It is a vital task for pedagogy to compete and fulfil current design expectations in engineering.

This paper is part of a research study which aims to develop a framework for a newly proposed learning and teaching approach, project oriented design based learning (PODBL). Many universities in the Asia pacific region have used various learning and teaching approaches to enhance student learning outcomes. This research paper seeks staff members’ perspectives on design based learning approach from selected universities practicing design education in different ways. It looks into staff perspectives from Deakin University, Australasian University A, Australasian University B, Asian University A and Asian University B.

Key words: design based learning, staff perspectives, project oriented design-based learning, curriculum development

1. Introduction

In engineering education, students are active learners while teachers are perceived as facilitators. All universities have the capability to produce qualified professionals by motivating and developing the skill set of students to become experts in a chosen field. The graduation rate for engineers in Australia is ever-increasingly
A Comparative Study of Staff Perspectives on Design Based Learning in Engineering Education

growing (Group, 2007); however students lack practical knowledge. There is no consistency on types of courses, facilities, infrastructures, or frameworks for students. This comes as many universities have mixed opinions surrounding the connotation of “Education”. Some believe education is one’s self-becoming a skilful product of human society, while others it is acting on the needs of the stakeholder. Despite this, there are still many students who are overlooked for jobs for unknown reasons. To counter this problem, number of educators has developed many approaches and concepts (Birdy Reynolds, 2009). Design based learning (DBL) is one of the most essential approach for learning and teaching that is centred on a design problem solving structure adopted from a combination of problem and project based learning. This research paper seeks staff members’ perspectives on design based learning approach from selected universities practicing design education in different ways. With those analyzed data from staff perceptions on DBL help engineering curriculum to enhance learning and teaching. This paper is part of a research study which aims to develop a framework for a newly proposed learning and teaching approach, project oriented design based learning (PODBL).

2. Design Based Learning in Engineering Education

When students work on projects, they share their ideas with other team members and they are encouraged by formal and informal classroom activities. Industry is looking for professionals with design knowledge, which is integrated with creative and innovative interdisciplinary thinking (Black, 1994; K., 2006). Design based learning (DBL) approach is used to enrich student involvement in learning science and to combine design experience with it (Nelson, 2004). DBL is a type of learning where the problem is solved by student teamwork. DBL has implemented in biology for better understanding of science and technology, which is based on the performance of DBL units with good conceptual targets (Michelle R. Ellefson, 2007).

By engaging students in learning design, DBL provides an opportunity to experience individual, inventive and creative projects that initiates the learning process in relation to their preferences, learning styles and various skills (Birdy Reynolds, 2009; S. M. Gómez Puente, 2011). Yaron dopplet in (Doppelt, 2009) states that DBL is used to produce a curriculum which improves the learning for all students in science education. Students are involved in solving a problem through a creative project (Bell, 2010; Natascha Van Hattum-Janssen, 2007). Students experienced meaningful ideas, which allows them to analyze the suitable solution for it. To provide students with a better practice in design and technology, DBL involves several advantages such as good design that meets the social, economic and industrial needs. It is also an active learning process which makes students to practice and recognize different learning styles and team based activity which support learning and sharing through cooperative methods (Dopplet, 2008).

Design based learning is an effective vehicle for learning that is centered on a design problem solving structure adopted from a combination of problem and project based learning(Anette Kolmos, 2006; Kolmos, 1996). Design projects have been used to motivate and teach science in elementary, middle, and high school classrooms and can help to open doors to possible engineering careers. Design based learning has been implemented more than ten years ago, however it is a concept that still needs further development. Therefore it is very important to characterize DBL as an educational concept in higher engineering education (Wijnen, 1999; Doppelt, 2009; Dopplet, 2008).
3. Design Methodology

The aim of this research paper is to investigate the staff perspectives in design based learning in engineering education. The face-to-face interviews are based on qualitative questions that are analysed and presented in quantitative form. The questions covered here are designed to determine the staff perspectives on design based learning through their level of teaching experience from 1st year to final year. The research assistant who involved in the project conducted the interviews and data collected are anonymous and non-identifiable.

The results outlined are from the staff own experiences and present give various views, which include staff knowledge and expectations from which in turn can informs the school to implement a design centered education. This research work is carried out in line with the ethics approval process and procedures. The questions were prepared to identify the challenges in teaching and learning and in particular to investigate the staff perspectives on the practice of design based learning. From these results, the research will lead to new teaching and learning approach, which enhance student-learning outcomes. This paper is a part of a continuing process of a research project, which analyses teaching and learning approaches in engineering education.

In line with the ethics approval process and procedures, research assistant send an individual E-mails to every staff member. When a staff given an appointment time, the research assistant will conduct the face-to-face interview. An interview question set was asked to each staff that teaches and performs research in engineering design. The data collected are anonymous and non-identifiable. The collected data are analyzed to derive a quantitative outcome that shows the staff perceptions on design-based learning. The staff Interview questions is listed below

Q1: Define Design based learning (DBL)?
Q2: What does Engineering Design mean to you?
Q3: Are aspects of Engineering Design taught in your unit? If yes, How?
Q4: Do you see Engineering Design as an essential learning element of an Engineering program? If yes, why?
Q5: What do you think of some of possible ways to teach design?
Q6: Does your curriculum involve design-based learning through projects?
Q7: Could you please list some of the skills attained by students through DBL in your unit?
Q8: How can Engineering Design projects helps to collaborate with industry?

4. Why Staff Perspectives?

The quality of education is based on learning and teaching which is considered to be most important feature of a curriculum. The responsibility of a teacher is not only teaching students, it also includes various activities such as designing course structure, peer to peer learning, professional development, student interaction etc. when student become graduate engineer, industry need student to be a career focused graduates (Katikorhonen-Yrjanheikki, 2007). Graduates are expected to be skillful and be ready to work on projects early in their industry careers (Nair, Patil, & Mertova, 2009; TEQSA, 2012). From the initial stage of academic curriculum, teaching staff and the academic management are responsible for the curriculum development. To bridge the gap between students and staff, this study examines staff perceptions about design based learning approach in their curriculum from different universities. By integrating design and technology tools into engineering education, the aim is to provide students with dynamic learning opportunities to actively investigate and construct innovative engineering design solutions (Guy Littlefair, 2012).
5. Case Study of Five Universities

5.1 Design Based Learning Approach at Deakin University, Australia

Deakin University has established 40 years ago and today it has over 42,000 students. Design based learning is one of the most important fields of engineering learning that the School of Engineering at Deakin believes that it would enhance the learning experience for students. The school of engineering is currently using these methods at different levels in various units. There is a need to verify these methods and to identify the best practice in these methods to ensure the best possible learning experiences for the students. The staff members in the school of engineering participated in the face-to-face interview on design based learning. There are 25 staff members in the School of Engineering at Deakin University, 18 out of 25 staff members participated in the face-to-face interview. From the staff perspectives, it is possible to access the current levels of benefit to the engineering student. The results shown below helped the school to help the staff to improve their teaching experiences at the school of engineering at Deakin University (University, 2014).

5.2 Project Based Approach at Australasian University A

Australasian University A has established 47 years ago and today it has around 20,000 students. In Australasian University A, the Bachelor of Engineering program has been offered for four years in four different disciplines such as civil, electrical, mechanical and mining. The students are expected to acquire, develop and demonstrate technical engineering knowledge and skills in every engineering discipline. The structure of the engineering program is to have a 100% common first year, a 75% common second year with a 25% discipline stream component, 100% discipline based component in the third and final year. Students are expected to acquire, develop and demonstrate technical engineering knowledge and skills in every engineering discipline. By incorporating a project based learning approach throughout engineering programs enhances the learning and teaching process (Howard, 2005).

Project Based Learning is perceived to be a student centered approach to learning. It is predominantly task oriented with facilitators often setting the projects. Students need to produce a solution to solve a project and are required to produce an outcome in the form of a report guided by the facilitators. Teaching is considered as an input that directs the learning process. The problem is open ended and the focus is on the application and assimilation of previously acquired knowledge. According to Australasian University A, there is a need for this research to seek the views of staff members on design based learning in the School of Engineering and Technology at the university. About 14 staff members in the School of Engineering and Technology at Australasian University A participated in face-to-face interviews. It is interesting to see the views of staff on design based learning at Australasian University A. These staff members practice a project based learning approach in every unit of the engineering degree and have done so for a long time.

5.3 Design Practice at Australasian University B

Australasian University B has established in the year 2000 and the predecessors established more than 100 years ago and today it has 27000 students. In Australasian University B, the Bachelor of Engineering is common to all majors (Electrical and Electronic, Mechanical, and Maritime Engineering). Using a problem based learning (PBL) approach in the context of an engineering program helps students become creative engineering designers. The engineering curriculum practices PBL in the context of design activity and students need to apply theory to practice through practical focused engineering projects. When staff were asked what engineering design means,
they described it as a creative process of developing engineering systems using the knowledge of engineering science. Australasian University B staff reveals that designers need to understand the paradigm of engineers and engineers need to understand the paradigm of designers. Staff members also believe engineering design is an essential element of their curriculum and also mention their curriculum involves design-based learning through various design activities. Staff also mentioned how engineering design projects help to collaborate with industry. Through industry collaboration students obtain the opportunity to undertake industry-based projects with real world problems. Design based learning leads students into their future career placements and industry recognizes the graduate’s ability to fit into the job environment. In other words, industry collaboration becomes the student and industry.

5.4 Design Curriculum at Asian University A

Asian University A has established in the year 2009 and today it has around 5000 students. This curriculum is designed around cohort based learning and collaborative learning. The design centered education is focused on practice through design projects, self-study sessions, group discussions and independent activities. In the first year of engineering, each pillar provides foundation material with more advanced pillar subjects. Asian University A introduces the four-dimension design experience, 1D Big-D concepts, 2D integrative designettes, 3D thematic design projects and concepts vignettes and 4D Big D outside the box and behind the scenes. In collaboration with another Design Centric University, Asian University A staff members have obtained an extensive range of experience in teaching design practice. It’s encouraging to explore staff perceptions about DBL. About 7 staff members participated in face-to-face interviews. The researcher involved in this research visited Asian University A to acquire the views of staff on the design based learning approach.

5.5 Design Centric Program at Asian University B

Asian University B has established more than 100 years ago and today it has 27000 students. In the Faculty of Engineering at the Asian University B, the Engineering Design and Innovation Centre developed a Design Centric Program (DCP). DCP is a unique learning pathway that offers multi-year projects for students from different engineering disciplines to work together to solve design problems. Students spend 3 to 3.5 years working together in multi-year, multi-disciplinary projects. Teams of teachers from diverse backgrounds facilitate the students. To achieve the goal of developing education, design educators provide practical strategies that exhibit the pedagogy of design education and problem solving processes. DCP created a learning environment that encourages students to be creative in team learning and in collaboration/cooperation across disciplinary boundaries. With the Design Centric Program (DCP), staff encourage students to adopt a user centered approach in the Engineering Design and Innovation Centre at Asian University B.

6. Results

6.1 Staff Perspectives: Means of Design Based Learning

The interview questions set (8 questions) were prepared to identify the challenges in teaching and learning and in particular to investigate the staff perspectives on the practice of design based learning. The staff that teach and perform research in engineering design are participated in this research interview. The initial staff perspectives on design-based learning are shown below. Figure 1 illustrates staff perspectives on design based learning from different universities.
There are 25 staff members in the School of Engineering at Deakin University, with 18 out of 25 staff members participating in face-to-face interviews. Figure 1 illustrates staff perspectives about the meaning of design based learning (DBL). A large number of staff responses (40%) define DBL as learning design through projects, 20% define DBL as learning through design activities, 20% define it as a focus on aspects of design and 20% define DBL as an active learning process. Overall staff perceptions about design based learning shows every staff member has a unique understanding of the teaching and learning process with a focus on learning design in various aspects.

It is interesting to see the views of staff on design based learning at Australasian University A. These staff members practice a project based learning approach in every unit of the engineering degree and have done so for a long time. Figure 1 shows the perspectives of staff on design-based learning (DBL). 37% believe DBL is learning through design activities, 21% believe DBL is an active learning process, 21% view it as learning design through projects and 21% defined DBL as focusing on aspects of the design. In Australasian University B, 100% of staff members stated that DBL is learnt through the design process, and through design problems and activities. Staff also described DBL as using a methodology of design as a foundation for learning activity that guides students through a design problem.

At Asian University A, it’s very interesting to see that 43% of staff encapsulate DBL as active learning, that is students observe and reflect (theory to practice), 29% experienced DBL as learning through design activities, 14% said DBL is learning together by doing, and 14% believed it is a hands on approach through projects. To achieve the goal of developing education, design educators provide practical strategies that exhibit the pedagogy of design education and problem solving processes (Deakin, 2012). Figure 1 shows Asian University B staff
perceptions on DBL, with 29% believing DBL is learning through design, 29% accepting it as learning through problem solving, 28% describe it as students learning through practical means (hands on) and 14% believe DBL is learning to enhance design. It is interesting to see the consistency of staff views from five universities, defining DBL as learning design through projects, learning through design activities and design process, focused on aspects of design, DBL as active learning process, learning through problem solving, learning to enhance the design.

6.2 Staff Perspectives: Means of Engineering Design

As a part of the process towards identifying what DBL means to staff, it was important to find out what engineering design means to staff. Figure 2 shows that a large number of Deakin staff (30%) define engineering design as creating or designing something to benefit society, 20% define engineering design as a structured approach to an engineering problem solved through projects, 20% define engineering as using a design tool to engineer a creative solution, 20% define it as going through a design process and 10% defined it as using existing knowledge to create new things. At Deakin University, all engineering staff members believed engineering design is an essential element of an engineering program.

At Australasian University A, staff members were asked what engineering design means. Figure 2 shows that 36% believe Engineering Design (ED) means going through a design process, 21% reveal that ED is to create or design something to benefit society, another 21% explain that ED is a structured approach to solving an engineering problem, 14% of staff explain that ED is the use of existing knowledge to create new things and 8%
define it as using a design tool to engineer a creative solution.

Asian University A has established a stable pedagogy and curriculum for design education and research. Staff members expressed their views on the means of engineering design with Figure 2 illustrating that 43% of staff explain Engineering design as using engineering knowledge to solve design problems, 29% looks at it as design creating something with engineering the analysis tool, 14% describe engineering design as a process of synthesis and analysis, and 14% say it is using technology through the design process. Design oriented project organized education deals with know how, in addition to the practical problems of constructing and designing on the basis of a synthesis of knowledge from many disciplines (Clive L. Dym, 2005).

The purpose of design education is to enhance learning and teach students to become active participants to solve the design problems around them (Lehmann, 2008). Figure 2 reveals the views of Asian University B staff views on engineering design (ED). 29% say ED is using design with technical concentration for social need, more than 50% of staff believed the purpose of ED is to achieve knowledge, and identify and solve design problems using the design process. With the Design Centric Program (DCP), staff encouraged students to adopt a user centred approach in the Engineering Design and Innovation Centre at Asian University B.

6.3 Staff Perspectives: Aspects of Engineering Design Taught

Figure 3 illustrates that 35% of Deakin staff said that they teach it through application of design in projects, 30% mentioned it by teaching the design process with theory, 20% said they used aspects of engineering design taught by teaching the development to design process, while it is interesting to see that 15% teach design methodology (Design for X) and participate in Engineers without Borders projects. Figure 3 also illustrates Australasian University A staff mentioning aspects of design taught in their engineering units. 28% teach the application of design through projects, 28% teach the process of concept development to design, 22% teach through design methodologies and 22% teaching through the design process with practical knowledge. About 50% of staff at Australasian University B mentioned that aspects of engineering design is taught through practicing design by real world projects and (50%) by giving opportunities to create design through design process.

At Asian University A, when staff were asked about aspects of engineering design taught in their unit, it was motivating to look at the approaches used by staff to practice design (Figure 3). While 29% use design concepts and design based activities, another 29% of staff use the design process to solve problems, 14% teach design through 1D, 2D, 3D and Big D design projects, and 14% teach creative design integrated with experiential design. These views confirm that Asian University A is certainly focused on design centered curriculum, with the aim to enhance student-learning outcomes. Figure 3 also illustrates Asian University B staff views on aspects of engineering design taught in their unit. 14% teach more skills rather than technology through interdisciplinary projects, 29% teach engineering principles and fundamentals focused on design and another 29% teach through projects based on the design centric program. With the Design Centric Program (DCP), staff encouraged students to adopt a user centred approach in the Engineering Design and Innovation Centre at Asian University B. Overall staff view shows that every staff members acquired their own way of teaching design in various activities depends on their curriculum environment focused on design.
6.4 Staff Perspectives: Engineering Design as an Essential Element & Curriculum Involves DBL

Engineering design is one of the fundamental processes and activities in engineering and all other engineering activities relate to it. Studying engineering involves not only learning scientific knowledge and technological skills; it also involves learning the language, established practices, beliefs, and professional values of engineering culture that makes a student to be an engineer. Richard M Felder identifies “Engineering Design” as a systematic, intelligent process in which designers generate, evaluate, and specify concepts for devices, systems, or processes whose form and function achieve clients’ objectives or users’ needs while satisfying a specified set of constraints (Richard M. Felder, 1988).

<table>
<thead>
<tr>
<th>Engineering design as an essential element</th>
<th>Deakin University</th>
<th>Australasian University A</th>
<th>Australasian University B</th>
<th>Asian University A</th>
<th>Asian University B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>15</td>
<td>28</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly yes</td>
<td>85</td>
<td>72</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Tables 1 & 2 show staff members views on engineering design as an essential element and whether their curriculum involves design based learning. It is clearly shown that staff members mostly agree that design is an essential element of an engineering program at Deakin University. These staff members teach and undertake...
research in engineering design in the School of Engineering at Deakin University and it can be seen the majority of staff strongly accept their curriculum involves DBL. At Australasian University A, 100% of staff members accepted that engineering design is an essential element in an engineering curriculum. In Australasian University B, Asian University A and Asian University B Staff members (100%) believe engineering design is an essential element of their curriculum and also mention their curriculum involves design-based learning through various design activities.

<table>
<thead>
<tr>
<th>Curriculum DBL</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In transition status</td>
<td>5%</td>
</tr>
<tr>
<td>Possible yes</td>
<td>20%</td>
</tr>
<tr>
<td>Strongly yes</td>
<td>75%</td>
</tr>
</tbody>
</table>

Table 2  Curriculum Involves DBL

<table>
<thead>
<tr>
<th>Curriculum DBL</th>
<th>Deakin University</th>
<th>Australasian University A</th>
<th>Australasian University B</th>
<th>Asian University A</th>
<th>Asian University B</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>In transition status</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Possible yes</td>
<td>20%</td>
<td>43%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Strongly yes</td>
<td>75%</td>
<td>72%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

6.5 Staff Perspectives: Aspects of Engineering Design Taught

Staff were also asked about their perceptions on possible ways to teach design. Table 3 illustrates Deakin staff perspectives about possible ways to teach design, such as team based learning, activity based learning, analytical thinking and self-directed learning. It is exciting to see Australasian University A staff members views of all possible ways to teach design from Table 4, about 36% prefer active based learning, 14% practice through analytical learning, 36% use self-directed learning and 14% use team based learning. The Asian University A staff members look for different ways to teach design in engineering. Table 5 shows about 43% of staff teach design through standard pedagogy, with a hands on approach to design based activities, 29% teach using theory to practice with real world problems that include multidisciplinary design projects, and 14% say they teach through competition, team based projects to help enhance practical learning and learning through observation for students.

Table 3  Possible Ways to Teach Design

<table>
<thead>
<tr>
<th>Possible ways to teach Design</th>
<th>Deakin University</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Team based learning</td>
<td>15%</td>
</tr>
<tr>
<td>Activity based learning</td>
<td>35%</td>
</tr>
<tr>
<td>Analytical thinking</td>
<td>20%</td>
</tr>
<tr>
<td>Self directed learning</td>
<td>30%</td>
</tr>
</tbody>
</table>

Table 4  Possible Ways to Teach Design

<table>
<thead>
<tr>
<th>Possible ways to teach Design</th>
<th>Australasian University A</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Activity based learning</td>
<td>36%</td>
</tr>
<tr>
<td>Analytical based learning</td>
<td>14%</td>
</tr>
<tr>
<td>Self directed learning</td>
<td>36%</td>
</tr>
<tr>
<td>Team based learning</td>
<td>14%</td>
</tr>
</tbody>
</table>
With the Design Centric Program (DCP), staff encouraged students to adopt a user centred approach in the Engineering Design and Innovation Centre at Asian University B. Table 6 illustrates Asian University B staff views on possible ways to teach design. About 57% of staff members preferred learning through projects, (57%) through practical work, 43% want to focus on design user centric practice and 28% preferred through design tasks, design activities. Table 7 clearly shows Australian University B staff views on possible ways to teach design. 50% of staff teaches through design approach, design projects and another 50% teaches design through learning experience, practical real world problems, case studies. The overall staff views from different universities describes every staff uses their own way of teaching approach to enhance student learning outcomes according to their learning environment.

### Table 6  Possible Ways to Teach Design

<table>
<thead>
<tr>
<th>Possible ways to teach Design</th>
<th>Asian University B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Through (hands on) practical work</td>
<td>57%</td>
</tr>
<tr>
<td>Through design tasks, design activities</td>
<td>28%</td>
</tr>
<tr>
<td>Learning through projects, problem solving</td>
<td>57%</td>
</tr>
<tr>
<td>Students must experience the design process</td>
<td>43%</td>
</tr>
<tr>
<td>Focus on design user centric</td>
<td>43%</td>
</tr>
</tbody>
</table>

### Table 7  Possible Ways to Teach Design

<table>
<thead>
<tr>
<th>Possible ways to teach Design</th>
<th>Australasian University B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach design approach to solve problems, teach through design projects, through design planning stage by experience</td>
<td>50%</td>
</tr>
<tr>
<td>Teach design through learning experience, teach through practical world problems, teach through case studies, models</td>
<td>50%</td>
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#### 6.6 Staff Perspectives: Skills Attained by Students through DBL

Table 8 illustrates Deakin staff perspectives on the skills attained by students through DBL. The majority of staff members mentioned that creativity (70%), learning by doing (45%), problem solving (45%), and self-directed learning (40%) are the most important skills attained by students through design based learning in their curriculum. Table 9 shows the perceptions of Australasian University A staff about skills attained by students through DBL. About 64% say students acquire analytical learning, teamwork, and communication skills, 42% believe students develop creativity and problem solving skills, 35% reveal students obtain technical and self-directed skills, and only 22% say students learn through doing. It appears that all of the above skills are required for a student to become a graduate and to work in an industry. Australasian University A has introduced
A Comparative Study of Staff Perspectives on Design Based Learning in Engineering Education

project-based courses as 50% of the first year, with first year courses focusing on the development of team work skills in addition to communication, computing, and problem-solving skills. First year students are also introduced to engineering issues such as ethics, environmental and social factors (Julie E. Mills, 2003).

<table>
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<th>Table 8  Deakin University</th>
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<tr>
<td>Skills attained by students through DBL</td>
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<tr>
<td>Teamwork &amp; communication</td>
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<tr>
<td>Learning by doing</td>
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<tr>
<td>Problem solving</td>
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<tr>
<td>Self directed learning</td>
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<td>Creativity</td>
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<table>
<thead>
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<th>Table 9  Australasian University A</th>
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<tbody>
<tr>
<td>Skills attained by students through DBL</td>
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<tr>
<td>Technical skills</td>
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<tr>
<td>Teamwork &amp; communication</td>
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<tr>
<td>Learning by doing</td>
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<td>Problem solving</td>
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<td>Self directed learning</td>
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<td>Creativity</td>
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<tr>
<td>Analytical learning</td>
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At Australasian University B, when staff asked about their views on the skills attained by students through design based learning in their curriculum. They mentioned that design education always sets out to have student content knowledge and the development of skills such as collaboration, critical thinking, creativity, innovation, and problem solving to increase motivation and engagement. Table 10 illustrates Asian University A staff members’ views on the skills attained by students when they engage in design based learning. From the teaching experience of staff, it is clearly shown that Asian University A design centered curriculum enhances student learning around the skills listed below. More than 50% of staff members value when students acquire creativity, innovation, self-improvement, awareness, mindfulness, communication and presentation skills through DBL.

<table>
<thead>
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<th>Table 10  Asian University A</th>
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<tbody>
<tr>
<td>Skills attained by students through DBL</td>
</tr>
<tr>
<td>Prototyping, testing</td>
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<tr>
<td>Hands on learning, learn from experience</td>
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<tr>
<td>Self improvement, awareness, mindfulness</td>
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<tr>
<td>Communication &amp; presentation</td>
</tr>
<tr>
<td>Project management, teamwork</td>
</tr>
<tr>
<td>Analytical thinking</td>
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<tr>
<td>Creativity &amp; Innovation</td>
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<tr>
<td>Ability to observe, solving problems</td>
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Table 11  Asian University B

<table>
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<tr>
<th>Skills attained by students through DBL</th>
<th>Asian University B</th>
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<tr>
<td>%</td>
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<tr>
<td>Creativity and innovation</td>
<td>71</td>
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<tr>
<td>Analytical thinking</td>
<td>29</td>
</tr>
<tr>
<td>Ability to observe, problem solving</td>
<td>29</td>
</tr>
<tr>
<td>Prototype, testing</td>
<td>43</td>
</tr>
<tr>
<td>Project management, time management</td>
<td>43</td>
</tr>
<tr>
<td>Communication, teamwork</td>
<td>57</td>
</tr>
</tbody>
</table>

At Asian University B, Table 11 reveals staff experience on the skills attained by students through design based learning. Staff were assured that students attained creativity and innovation skills (71%), communication and teamwork skills (57%), project management and prototype testing skills (43%), and ability to observe, problem solve and think analytically (29%). Industry is looking for graduates who are ready to practice and perform essential competences such as practical knowledge, problem solving, teamwork, and innovative and creative designing of real world projects.

6.7 Staff Perspectives: Industry Collaboration

Figure 4 shows staff perceptions about the collaboration of academics with industry. At Deakin University, majority (30%) of staff members recommend that practicing and improving design projects in universities helps engineering design projects collaborate with industry. Only 10% of staff believes collaboration between academics and industry will help students’ exposure to real world problems. The engineering teaching staff at Deakin University obtained an adequate understanding of DBL, as illustrated from the results shown below. This will enhance student learning and staff teaching processes to better align with the learning and teaching model. This research helps to foster curriculum development in student understanding and engagement.

When Australasian University A staff were asked about how design projects help to collaborate with industry, all staff members who participated in interviews mentioned about the co-op program. This co-op program helps students find a paid work placement for almost a year in their second and fourth year of engineering. About 28% say that industry collaboration helps students realize theory to practice, 28% believe it helps student exposure to real world problems, 22% wants complex problems turned into smaller design projects with industry collaboration and 22% accept that industry collaboration is through capstone projects.

In Australasian University B, staff members approach industry collaboration through design projects. Staff also mentioned how engineering design projects, help to collaborate with industry. Through industry collaboration students obtain the opportunity to undertake industry-based projects with real world problems. Design based learning leads students into their future career placements and industry recognises the graduate's ability to fit into the job environment. In other words, industry collaboration becomes the student and industry.

Design education represents both serious challenges and outstanding opportunities. In fact, the intelligent and thoughtful design of the engineering curriculum should be the community’s first commitment (Clive L. Dym, 2005). Asian University A staff acknowledge that design projects help industry collaboration where students receive opportunity to experience industry expectations, and future career possibilities. There is always a benefit to both industry and a university through design project collaboration. Industry and university collaboration seems to be actively growing when engineering courses are developed (Katikorhonen-Yrjanheikki, 2007). Figure 4 shows Asian University A staff perceptions about industry collaboration. Finally, Figure 4 shows Asian University
B views of staff on engineering design projects that help to collaborate with industry. About 43% reveal the DBL approach is similar to industry requirements as it has strong collaboration, and mutual benefits from both industry and university. 14% of staff say it guides academics to plan future projects and helps students to integrate with industry.

![Figure 4: Staff Perspectives on Industry Collaboration]

7. Project Oriented Design Based Learning (PODBL)

Studying engineering involves not only learning scientific knowledge and technological skills; it also involves learning the language, established practices, beliefs, and professional values of engineering culture that makes a student to be an engineer. The problem solving is one of the important skills for students. Therefore the goal of all engineering programs is to teach problem solving skills to educate students as professionals. Industry is looking for professionals with design knowledge, which is integrated with creative and innovative interdisciplinary thinking. Therefore, the new proposed PODBL framework will focus on skills such as innovation and creativity in the engineering discipline.

Learning through projects is considered as a way of interactive learning. It benefits all the stakeholders such as students, industry, community, and of course the university. It provides a framework for embedding experiential and rich learning activities, integrated with discipline-based curriculum that improves employment and career
outcomes (Chandrasekaran, 2012). The students’ perceptions on design based learning has an important value in their learning curriculum and encourages engineering pedagogy to use it as one of its engineering learning principles (Chandrasekaran, 2013; Chandrasekaran, 2012). Project-oriented design based learning is applicable to motivate the students and also to teach engineering science in classrooms to get more practical experience that fulfill the industry needs (Chandrasekaran, 2013). The engineering teaching staff at Deakin University seem to have an adequate understanding of design based learning which will enhance student learning and staff teaching processes to better align with the learning and teaching model (Chandrasekaran, 2013; Chandrasekaran, 2012).

Project-oriented design based learning is set to have a positive effect on student content knowledge and the development of skills such as collaboration, critical thinking, creativity, innovation, and problem solving which increases their motivation and engagement (Chandrasekaran, 2013). It is an interesting task for academics to implement a PODBL approach and integrate design and technology into projects in meaningful ways. Design can be learned and taught through a project oriented design based learning approach in a convalescent way which is inspired by the accreditation requirements (Chandrasekaran, 2013).

8. Conclusion

Overall staff perceptions on design based learning from different universities shows that majority of staff have a unique way of teaching and learning, which focuses on learning design in various aspects. The survey results will help the engineering education community to improve their teaching experiences and practice. The results outlined in this study are from the staff own experiences and present views, which in turn can informs the engineering education community to implement a design centred education. This research paper is part of continuing research which aims to develop a framework for a newly proposed approach based around project oriented design based learning. Project Oriented Design Based Learning (PODBL) is set to have a positive effect on student content knowledge and the development of skills such as collaboration, critical thinking, creativity, innovation, and problem solving which increases their motivation and engagement. It is a challenging task for academic staff to implement a PODBL approach and integrate technology into projects in meaningful ways.

References
(IETEC), Ho Chi Minh City, Vietnam.


Applying the Tower of Hanoi to Pre-assess Planning and Goal Setting Skills in High School Students

Laura Campbell, Alexandra Buchanan

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Abstract: This teaching technique applies the Tower of Hanoi as a tool to pre-assess students on the skills of planning and goal setting. Objectives: By the end of the lesson, the students will be able to determine their personal strengths and weaknesses of planning and goal setting skills and develop a plan that uses eight elements of planning and goal setting for a health concern. Primary Audience: High school students.

Key words: health education, teaching strategies, planning, goal setting, Tower of Hanoi, Tower of London, high school lesson, pre-assessment

1. Introduction

The Tower of Hanoi is a game that was originally designed by a French Mathematician, Edouard Lucas in 1883. This problem solving game consists of eight disks (with a hole in the middle) stacked (largest to smallest) on one of three large pegs. The object of the game is to move all of the disks to another peg following a specific set of rules (Hofstadter, 1985). The Tower of Hanoi can be applied as a pre-assessment tool for planning and goal setting skills to reduce a few challenges. The challenges that teachers face in assessing planning and goal setting skills include students reporting outcomes with honesty, the length of time it takes to set a goal and complete a plan, and assessing whether students are effectively applying planning skills on their own. Assessing planning skills are difficult in the classroom as students will often follow the directions of the activity and inherently practice the skill of planning and goal setting appropriately. A common practice assessment for planning and goal setting skills may include a project-based assignment that includes the elements of planning and goal setting. By using project-based assessments that necessitate the implementation of each element of the skill in order to complete the assignment, it is difficult to determine if students were completing the appropriate elements of planning and goal setting because they were aware that the assignment included each element as a requirement. It is also difficult to determine if the student transfers those skills to their own life experiences. However, if the students were given a problem to solve (such as the Tower of Hanoi) that required planning and goal-setting, and they were unaware that the teacher was using it as a tool to assess whether or not the students would apply the necessary elements, then the teacher (and student) would better understand their strengths and weaknesses of
applying the skills. Following a pre-assessment of the skill, the students should be encouraged to practice the elements of the skills with attention to areas of weakness.

A number of researchers have already looked into the effects of preplanning through individuals’ performance on the Tower of London (TOL) task. The TOL task that resembles the Tower of Hanoi, requires participants to perform a number of strategic moves in order to arrange a set of disks and reach a desired outcome (Kaller, Rahm, Köstering, & Unterrainer, 2011). The findings of this research support the idea that the Tower of Hanoi can also be used to assess an individual’s planning behavior.

Research has supported the idea that planning improves performance and the likelihood of goal attainment in ordinary tasks such as running an errand. Normally a small task, such as picking up bread on your way home from work, could easily be forgotten. However, individuals who make an exact plan as to when and how to complete the task are more likely to do so (Aarts, Dijksterhuis, & Midden, 1999).

Studies completed with the TOL are consistent with the research of Aarts et al. (1999) as well. Luciana, Collins, Olson, and Schissel (2009) tracked planning time and average moves made to complete the TOL among participants 9–20 years old. They found that participants that spent more time planning before attempting the TOL were able to do it in fewer moves, regardless of age. They also noted that as participant age increased through adolescence, the amount of time spent planning increased; implying that planning skills mature with age.

While the current research does make a positive correlation between time spent planning and accuracy completing the TOL, there are noteworthy limitations. For example, increased planning time could be a result of student confusion, and decreased planning time may be a sign of higher processing speed (Luciana et al., 2009). Since processing speed and possible confusion have not been accounted for in most studies, it might seem that the TOL is an unreliable tool to judge a student’s planning skills. However, if teachers observe each student closely during the planning stages of the TOL or Tower of Hanoi task, they would be able to record the steps that each student took and identify areas of strength or weakness in the skill of planning. This information allows teachers to pre-assess the skill of planning and goal setting (technique, motivation, application, etc.) in order to prepare an appropriate lesson that meets the needs of each student.

If setting a goal and planning out the steps to achieve the goal make it more likely to obtain a desired outcome, there is no question that the ability to set a goal and make a plan to achieve the goal are valuable skills. With students 11–17 years old showing varying abilities in the skill of planning, middle to high school students are ideal ages to focus on refining the skill. By asking students to think critically about tasks that require planning to be successful; such as the Tower of Hanoi or Tower of London, teachers are able to determine the strengths and weaknesses of the students (Luciana et al., 2009).

2. Teaching Method

2.1 Objectives

As a result of this pre-assessment, students will be able to:

- Determine strengths and weaknesses of their own planning and goal setting skills (based on a pre-assessment).
- Develop a plan using 8 elements of planning and goal setting for a health concern with attention to areas of weakness (based on the pre-assessment).
2.2 National Health Education Standards: Performance Indicators

(1) Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.

Rationale: Goal-setting skills are essential to help students identify, adopt, and maintain healthy behaviors. This standard includes the critical steps that are needed to achieve both short-term and long-term health goals. These skills make it possible for individuals to have aspirations and plan for the future.

(2) Performance Indicator: 6.12.1 – Assess personal health practices and overall health status.

(Joint Committee on National Health Education Standards, American Cancer Society, p. 34).

2.3 Materials and Resources

- A desk, chair, writing utensil, and a sheet of paper for each student
- Each desk has dividers or anything that provides private individual working spaces
- Worksheet (Figure 1)
- Homework (Figure 2)

2.4 Primary Audience

This teaching technique is designed for middle school or high school students.

3. Teaching Procedure

Pre-Activity Preparation: The teacher will arrange the desks for a testing environment (students are unable to see each other’s work). Copies of Figure 1 and 2 will be made for each student in the class. Also, a copy of figure one and a quarter, nickel, penny, and a dime will be sitting on the teacher’s desk.

3.1 Step One

Once the students find their seats, the teacher will read the following rules:

- You will be given a set of instructions for a task that must be completed on your own.
- Follow the directions carefully.
- You have 40 minutes to complete this task.
- Once you have read the directions and are confident that you can complete the task successfully, raise your hand and the teacher will call you up to the front desk and evaluate your attempt at the task. At that time, you will have only one opportunity to demonstrate your answer to the teacher (without starting over).
- Do not raise your hand to complete the task, until you believe that you are ready.
- Once you are finished, you may begin to work on your homework assignment.
- If you have a question, raise your hand and wait until the teacher approaches you before asking the question.

3.2 Step Two

The teacher will pass out the worksheet (Figure 1) and tell the students to begin. The task describes the Tower of Hanoi game; modified (using coins and circles instead of disks and pegs) for convenience. The students have one opportunity to demonstrate to the teacher that they are able to move all four coins to a different circle by only moving one coin at a time and never placing a larger coin on top of a smaller coin. The students are told that they must try to complete the task in the least number of moves. They are also told that 15 moves are the least number of moves possible for this activity. Some of the students will individually ask if they may use coins in
their pocket or tear up paper to represent the coins to practice the activity. The teacher should allow the student to use ideas that they come up with to practice the activity. It is important that the students receive the response from the teacher individually (the question should not be answered out loud to all of the students). Assessing whether or not students identify resources to help them create a plan is determined by this action.

3.3 Step Three

It is also important that the assessment of planning and goal setting skills are not announced to the students. If the skills are announced, then the teacher will be less likely to receive a true assessment of whether or not the student would attempt to apply the skills on their own. The teacher will notice that some students will raise their hand to complete the task in the first 5 minutes and attempt the task with no planning. Other students may attempt to practice the activity at their desk by tearing off paper or writing something down before they complete the task. The most successful students will set a goal of 15 moves on their paper. They will also create a symbol or number for each move that they plan to make during the final task. These students will not raise their hands to complete the task until they have identified the exact plan of action.

3.4 Step Four

After each student who attempts the task, the teacher will count the number of times a coin is moved and record it. The student will pick up a homework sheet (Figure 2) and begin to work on it at their desk while they wait for other students to finish the task.

4. Discussion

Once every student has completed the task and completed the homework assignment (this may be the next day of class), the teacher will go over the intentions of the task and use the homework assignment to begin the following discussion:

- What did you do to plan for the task?

The teacher will list the following 8 elements (steps/stages) of planning and goal setting as they are mentioned. After the discussion, the teacher will list the remaining elements: For the students that developed a plan, the teacher will also list their examples.

1. Determine the goal: Move all of the coins (following the rules) in only 15 moves
2. Develop a template to guide the plan toward the goal: Numbered the paper 1–15
3. Identify all the necessary components: Created a symbol to represent each coin, or tear up paper to represent the coins.
4. Brainstorm ideas to identify possibilities/options: Played around with the moves to identify the most effective approach.
5. Plan a schedule: Created a list of moves for each number of attempts
6. Make adjustments until all necessary components are included in the schedule: If the schedule did not fit the goal (15 moves) then the schedule was altered until it met the goal.
7. Assign responsibilities: Every move (15) was accounted for, and a list of exact moves was identified.
8. Recognize when the plan is complete: The students did not stop planning until they were confident that the plan was going to meet the goal.

- What was the first thing that you decided to do once you became aware of the task?
Applying the Tower of Hanoi to Pre-assess Planning and Goal Setting Skills in High School Students

The students, who did not create a plan, will wonder why you did not tell them to create a plan, or will say that they did not know that they were supposed to make a plan. It is important to discuss the purpose of the task. The students should be able to relate this activity to other areas of their lives. Additional questions to ask these students:

- What other areas of your life do you think that you do not plan because you did not think to plan?
- What are areas of your health that you might not realize that you have no plan or goal?
- How did you feel at the beginning (once you received the rules to the task)?

Some students will identify stressful emotions and other students might have been excited that the task was not based on knowledge or information. Additional discussion items:

- The level of stress will decrease if you have direction and a plan of action.
- Once you start to feel stress, recognize that it is a sign that you may need to develop a plan.
- How much time did you spend deciding what you should do?
- Compare the students who took the time to plan with the students who did not.
- What was your goal (and why)?

Some students did not have a goal. It is important for these students to recognize that they may not be creating enough goals in other areas of their life.

Some students may have had a goal to finish the activity as soon as possible. They may have also felt excited because they believed that they accomplished their goal by not forming a plan and attempting the task with the teacher very early. It is important for these students to realize that patience and organization is a part of planning. An area for improvement for these students would include learning how to invest time in preparation and work on being thorough with attention to details. They should also try to examine other areas in their lives where they take a competitive approach rather than the most effective approach. **Weakness:** They didn’t think to create a goal or plan.

Some students may have had a goal to complete the task in 15 moves and raised their hand once they were able to practice it on their own. However, once they completed the task with the teacher, they were unable to repeat the results effectively.

It is important for these students to recognize that having an effective plan includes being able to predict the end result with the highest possible level of certainty. These students should examine areas in their lives where they plan part of their goal and hope for the best in the end. **Weakness:** They stopped the plan after the fourth element. They need to work on completing the remaining elements.

For the students who wrote down every move before attempting the task, they already knew that the end result would reach their goal. These students should recognize their strengths in planning and goal setting skills. They should also be encouraged to identify areas where they can apply these skills to improve their health.

- What barriers did you notice?

Some students may be confused with the question because they don’t understand what is meant by “barrier”. Describe a barrier as elements that made the task difficult or possibly made the student want to quit or give up at some point.

- Examples of barriers for this task:
  (a) Not being able to ask anyone for help
  (b) Time limits (end of class)
  (c) Not having the coins to practice the moves
• What did you do to overcome the barriers? Describe the importance of recognizing barriers and trying to strategically plan to overcome the barriers rather than letting them lead to frustration or giving up. Some students created coins by tearing up paper or wrote down a list of moves they plan to make during the task with the teacher.
  • Discuss the types of questions students individually asked and what students used to help them.
  • Discuss the importance of being resourceful and thinking about options.
• How did you feel once you found out how many moves you made?
  ▪ For students who planned effectively, they would have felt confident before the moves were made at the teacher’s desk.
  ▪ For students who were disappointed, they would recognize that they don’t need to be disappointed, surprised, or hoping if they take the time to plan thoroughly.
• How can you relate your actions during this activity to your life to improve your ability to plan and goal set? It is important for students to examine their approach to this task and identify areas in their life where they do effectively plan and areas where they could do more to plan. The teacher will request the following information to be submitted in the students’ journal:
  (a) List 3 goals that would enhance your overall health status if you started a plan.
  (b) Using the 8 elements listed above, plan for one of the goals (identified above) to enhance a health area in your life.

5. Assessment Procedures and Evaluation Rubric

The Tower of Hanoi would be used as a tool to allow the teacher to pre-assess the student’s strengths and weaknesses of planning and goal setting skills. While the students were completing the Tower of Hanoi, the teacher would record the following information for each student:
  ▪ Did the student create a goal and a plan?
  ▪ How much time did the student spend planning before they attempted the task?
  ▪ Was the student resourceful (did they ask to use coins or tear up paper for coins)?
  ▪ Did the student identify every move before they decided to complete the task?
  ▪ Record the number of coin moves the student completed during the evaluated task.

The teacher will also use the responses to the homework assignment (Figure 2) to guide the students through the discussion and help them identify their personal strengths and weaknesses. The 8 elements of planning and goal setting will be identified during the discussion and students should be able to identify the specific elements that they need to work on; based on the steps that they did not take during the pre-assessment.
  ▪ The teacher is encouraged to examine and address any differences in the information that was recorded by the teacher during class to the information that the student wrote down in response to the homework assignment.

The teacher will read the journal entries of each student to determine the students’ interpretations of their strengths/weakness and measure their ability to apply the elements of planning and goal-setting to increase a health practice.

References
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Appendix

Figure 1  Worksheet

Name:_____________________________________    Date:______________

Directions:
At the teacher’s desk you will see a stack of four coins and three circles. The coins will be stacked in a specific order according to size (Quarter on the bottom, nickel, penny, and a dime on top). When you are ready to complete your task, raise your hand and the teacher will call you up to the desk. You will be evaluated on your ability to move the coins from the original circle to another circle following the set of rules below. You will only have one opportunity to complete the task; therefore do not complete the task with the teacher until you think you are ready to begin. Once you complete the task, you will be handed a homework assignment that you may begin in class if you finish before other students.

Objective of the task:
To have all four coins in the same order (quarter (bottom), nickel, penny, and dime (on top)) in a different circle. Each coin will be moved one at a time and the number of moves will be recorded by the teacher. It is your job to complete the task in the least number of moves. The least number of moves possible is 15.

Rules for the task:
1. Only move one coin at a time (the coin on top of any stack or the only coin in a circle).
2. Coins can be moved into any circle (including the starting circle).
3. When moving the coins, they must be stacked (for example: you cannot have two or more coins side by side in a circle).
4. Never place a larger coin on top of a smaller coin (note the size; disregard the value).

Hint: To begin, the only possible move is to transfer the dime into one of the other circles.
Figure 2  Homework

Name: __________________________  Date: ______________________

1. Have you ever done this task before this class?

2. What questions did you have after reading the directions for the task?

3. What was the first thing that you decided to do once you understood the task?

4. Rate your level of stress:  (1 = no stress – 10 extremely stressed)

5. How much time did you spend deciding what you should do?

6. What was your goal (and why)?

7. Was it important for you to achieve the highest score on this task (15 moves)?

8. Were you concerned with the amount of time you were spending on the task?

9. Did you feel frustrated at any time during the task (describe)?

10. What barriers did you notice?

11. What did you do to overcome the barriers?

12. How did you feel once you found out how many moves you made during the final attempt?

13. What would you have done differently if you could do it all over?

14. How can you relate your actions during this activity to your life to improve your ability to plan and goal set?
Archival Collection: An Annotated Bibliographic Directory

Marilyn L. Laspiñas
(Cebu Normal University, Philippines)

Abstract: The study aimed to produce an annotated bibliographic directory of selected archival collections of the Basilica del Santo Niño library dated from 17th to 19th centuries. Specifically, it sought to identify the selected archival collection in terms of type and to compile a listing specifying the subject, bibliographic information, language used and annotation. The descriptive method of research specifically the documentary analysis type was used in the study. The main source of the data was the material itself, these materials were the Basilica del Santo Niño selected archival collections such as books and periodical articles published from 17th to 19th centuries. The study revealed that there were 117 titles with 475 volumes of books and 6 titles with 158 volumes of bound periodicals. The bibliographic directory comprised a total of 169 entries for books and periodical articles. The total selected archival collection including books and periodicals from the 17th to the 19th centuries comprised of 123 titles with 633 volumes. Majority of the entries are books mostly published in the 19th century. This annotated bibliographic directory of Basilica del Santo Niño’s selected archival collection is essential to facilitate the access and retrieval of the valuable and priceless information needed of the researchers in their research. The annotated bibliographic directory would be promoted to inform researchers to realize the value and importance of archival collection studies.

Key words: annotations, annotated bibliography, annotated bibliographic directory, archival collection

1. Introduction

Bibliography is intended as a guide to the researcher and an indication to the reader, where the information is found — the original source of the facts. According to Harner (2000) it is an extensive list of sources you have consulted as you worked about your document. Bibliographies are sources consulted in the library in order to locate the specific materials needed. The most familiar of these are the Card Catalog, OPAC (Online Public Access Catalog) and periodical indexes (print or electronic databases). These are the common bibliographic tools one encounters in the library. They are designed for easy access and information retrieval. A bibliography is compared to a directory in which all materials regardless of format and types are listed. This is the primary tool, which a librarian intends to create for the users’ satisfaction in terms of library services. A library user usually consults directly to the card catalog or OPAC in search for a specific document available in the library.

Library provides sources for the researchers’ need. In providing information to the users, the library provides bibliographic data and a short annotation of the resources. An annotation is very important because it is the

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primary consideration needed to encourage greater amount of reading to the library users. We can look at an annotation as a highly developed activity, one that represents an important part of reading, writing, and scholarly work (Robert E. Kennedy Library, 2001). Through the annotations the readers are encouraged to read and to do research because it is applicable both for the printed materials and for non-print materials. In highly competitive technological changes, people are fast and accessing information is easy. With the use of an annotated bibliography, research can be made effective and efficient.

The best guide to information search for materials available in libraries is not only through bibliographic citations given but also through the efforts of competent library personnel who devote their time organizing available resources and with whom researchers can interact intelligently. The interaction between researchers and information providers are made possible through several bibliographic researches done in the country (Hagler, 1997). Moreover, Madsen (2002) presented that one of the most important tools in the library is a bibliography for easy access to information. The library resources will be made available through bibliographic information and annotations. It was proven that it is very important because the researcher will not encounter difficulty in locating the information on local history and cultural heritage of the Filipino. There are several reference sources that regarding this topic but where and how to locate them is the problem. Bibliographic annotations provide access to information.

The study focused on the archival collections of the Basilica del Santo Niño Library. The present collection of the library is about eight thousand (8,000) volumes. The 17th to the 19th centuries collection is more than one thousand volumes including bound periodicals, but the selected books and periodicals that are included in this study are more than six hundred (600) volumes only. The oldest book in the collection was published in 1604, while the earliest bound periodical is dated 1877. The Basilica del Santo Niño Library is known for its rich collection on religious and historical data. Thus, Valauskas (1999) emphasized that bibliographic information is created for notification, selection and access to original documents. In many cases, this bibliographic information is accessible electronically and, moreover, can give users direct access to the document if description and document are “linked”.

An annotated bibliographic directory adds descriptive comments assessing the nature and value of the cited works. The adding of annotation provides the future reader essential information and a foundation for further research. The primary function of bibliographic data is to assist the reader in finding the sources used in the writing of a work (Robert E. Kennedy Library, 2001).

According to the Archives Library Information Center (1999), records with intrinsic value may be retained for their evidential and informational value. Likewise, these records must be saved because of their unique physical features and historical significance. On the other hand, Ikeda (2002) illustrated that an annotated bibliographic directory provides basic bibliographical information in a standard style of documentation, as in a regular bibliography or “works cited” page; the only difference is that each citation is “annotated” with a brief statement about the text. This statement may vary in length from a sentence or two to a full paragraph, but it always contains a description or summary of the text, and it often includes an assessment of its use, value, and/or significance.
2. Framework of the Study

3. Objectives of the Study

This study aimed to produce an annotated bibliographic directory of archival collection of the Basilica del Santo Niño Library from the 17th to the 19th centuries. Specifically, it sought to identify the selected archival collection in terms of type of materials and compile a listing specifying the subject, bibliographic information, language used, and annotation.

4. Methodology

This study employed the descriptive method of research, specifically the documentary analysis type in producing an annotated bibliographic directory of the archival collection of the Basilica del Santo Niño Library. This method designed to gather information about the current existing condition with the primary purpose of describing the nature of a situation it exists at the time of the study and to explore the causes of particular phenomena. Documentary analysis is an investigation of a work in a visual presentation of historical subjects or focus in a factual and informative manner.

5. Results and Discussions

5.1 Identify the Selected Archival Collection in Terms of Type of Materials

There were only two titles with five volumes of books in the 17th century, nine titles with 30 volumes in the 18th century, and 106 titles with 440 volumes in the 19th century. Bound periodicals have six titles with 158 volumes, all published in the 19th century. The total selected archival collection including books and periodicals from the 17th to the 19th centuries comprises of 123 titles with 633 volumes. Books in the 17th centuries included topics on the history of Philippine Christianization, the Augustinian missionaries and the sermons specifically in the Lenten season. The 18th century books discussed changes in the literal translation of the Scriptures. The lives of Jesus, the Saints, the Popes, and the Canon law. The 19th century collection books include the lives of saints,
the blessed, and the Popes; theological, agricultural, Spanish-Visayan terms, and Spanish and Latin terms; the Canonical code; the works of religious authors; and the Sacred Bible. Majority of the periodicals were about the Augustinian missions in different places in the Philippines and foreign countries, and the Catholic Church, specifically its religious and scientific aspects.

5.2 Compile a Listing Specifying the Subject, Bibliographic Information, Language Used and Annotation

The subjects were limited only to the most relevant need of the researcher. Most of them were religious such as bible; biography of saints, blessed, and popes; church history; bibliography; and dictionaries such as agriculture, canon law, Spanish-Visayan language and theological terms. The bibliographic information for books describe the title, author, pagination, publisher, place of publication, publication date, whereas the bibliographic information for periodical articles include the title of an article, author of an article (if any), title of the periodical, volume number, page location, and date of publication. The provision of the language in each entry identified and specified of the available existing collection resources of the library. It helps the reader to decide whether to read or not the book and the periodical article, if they could understand or not the language. The annotations provided in each entry to guide and give an idea to the reader as to the content of a book and periodical article, and make a decision whether they read or not the book or the article after reading the annotation. It also helps them to choose what specific books and or periodical articles could answer their needs.

An annotated bibliographic directory is the listing of selected archival collections of the Basilica del Santo Niño library. This is designed for easy access and retrieval of information. Most of the collection is in Spanish, Latin and in Italian language. Most of the users cannot understand the content of a book or a periodical article but through the annotation provided, the reader is given an idea of what it is all about. The collection listed are rare and centuries old collections by the Augustinian fathers. These collections promoting the archival value to make the user aware that the archival collections had been kept for their evidential and informational value and to encourage the readers and future users in helping the preservation and conservation of the library collection. It was also found out that majority, if not all of the collections is rare because of their intrinsic value. It was confirmed by the Archives Library Information Center (1999), that records with intrinsic value may be retained for their evidential and informational value. Likewise, these records must be saved because of their unique physical features and historical significance.

6. Conclusion

Archival collections generated during the natural functioning of its creation (provenance) and categorize in its original order of creation. Archival collections are a special collection of the Basilica del Santo Niño Library. These are rare collections and majority is non-available in other libraries. The basilica del Santo Niño Library can be considered a repository of historical records of civilization.

7. Recommendations

An Annotated Bibliographic Directory contributes much toward the provision of integral information resources that would be a great value not only as a guide to the collection but also as a direction for prospective researchers and users, particularly those engaged in archival collection studies. The use of this annotated
bibliographic directory would be promoted to encourage more researches on the value of archival collection.

References
Reflections on International Exchange: Developing A Collaborative Curriculum Model

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Abstract: Ideally, international teacher exchanges would fully utilize a visiting lecturer’s expertise and cultural background to broaden student perspectives. However, certain limitations related to programme and curricular structures as well as student expectations and goals may hamper this opportunity. A Fulbright visiting lecturer and host country faculty member reflect on the constraints and opportunities encountered when co-teaching a course. Implications of this case study focus on ways in which seemingly restrictive curricular parameters may be modified.

Key words: international exchange, curriculum, multicultural education, teacher and student expectations, co-teaching, collaboration

1. Introduction

An international teaching exchange is, indeed, an invaluable learning opportunity; in the case of a Fulbright fellowship, mid-career and senior professionals from developing countries who aspire to it regard it very highly. They are aware of the developments in their subject to a large extent and they would like to learn further so they will continue to be relevant. They are equally eager to know if they will measure up to their own expectations as professionals. Therefore, the applicants for a Fulbright teaching fellowship are ambitious, confident, and nervous. Adequate preparation, which makes varied demands, is necessary if the aspirant wants to learn from the experience and contribute the best to the host university.

Similar factors apply to those presented with an opportunity to teach or pursue research opportunities in another country; interact with new educational systems, teaching and learning approaches, and curricula; and collaborate with their host country counterparts. International scholarly exchange continues to increase. In 2011/2012, the world total for international scholars represented 116,917 individuals, a 1.4% increase from the previous year (Institute of International Education, 2012). The Fulbright Scholar programme itself sponsors 800 educational professionals from the United States to 155 different countries to pursue scholarship, teaching, and educational opportunities, and invites another 800 faculty members from across the world to the United States.

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Reflections on International Exchange: Developing A Collaborative Curriculum Model

(Council for International Exchange of Scholars, 2013). The goal of such exchanges is expanding horizons and perspectives on multiple levels.

Once in the host country, the awardee or visiting teacher is challenged both physically and emotionally. In addition to the obvious challenges of acclimatization to food, housing, climate, transportation, and new colleagues, the teaching context presents challenges and opportunities, some of which may be unanticipated. These relate to four components of the teaching context: curriculum, visitor’s background knowledge of the local situation, visitor’s awareness of the student’s background knowledge, and the willingness of the visitor and students to take pedagogical risk. All of these issues are situated within the educational or academic culture of the host institution as well as the broader regional culture. These elements affect teacher and learner expectations and learning outcomes. This article explores curricular issues related to constraints that may present themselves in international educational exchange contexts. The case study presented is a co-teaching situation in which a visiting lecturer and host country faculty member collaborated on a course. The study has implications for curriculum issues in general.

2. Context for the Exchange

The Fulbright lecturer in this case study selected the host university primarily due to the opportunity to co-teach a course. She was also intrigued by the fact that the host faculty member indicated much homogeneity in the student population and in the region as a whole. Although cultural and ethnic diversity is growing, current demographic statistics indicate that approximately 17% of the population is ethnically diverse compared to 34% nation-wide (Perlich, 2009). The former number is expected to increase to 30% by 2050 while the latter is projected to be 54% (Perlich, 2009). This growth in diversity will have a significant impact on primary and secondary schools and presents a pressing need for teachers to be trained in English as a Second Language (ESL) pedagogies and multicultural issues. The master of education programme (MEd), in which the lecturer and host faculty member taught, is one of three master’s degree programmes at the institution, which received university status in 2008. The institution has no doctoral programmes. It is a large, open access, regional institution and its primary mission is on teaching rather than research. Thus, even the master’s degree programmes tend to have a practical, application-based approach founded in theory.

3. Curriculum Development: Constraints and Opportunities

Ideally the co-teachers, in this case, the Fulbright lecturer and the host country faculty member, would work together in designing the curriculum for the course. This might occur several months prior to the lecturer arriving on campus. In the current case, the host faculty member sent catalog descriptions of possible courses and syllabi to the lecturer and conversations ensued about which course would be the most appropriate to the lecturer’s background. These conversations informed the specific goals and proposed outcomes that the lecturer submitted as part of the part of the Fulbright application process.

Initially, a multicultural education course was identified; however, this course was not available during the semester of the Fulbright award. In its stead, the lecturer and faculty member were given the opportunity to teach a programme evaluation course with the idea that it could focus on evaluating the multicultural aspects of educational contexts such as the classroom environment, curriculum, pedagogy, teachers, school administration, school setting, and other factors to determine the extent to which these reflected multiple perspectives and
accommodated diverse students (Day, 1999). In this way, the lecturer’s unique perspectives could contribute to the course. Prior to the lecturer’s arrival, the lecturer and host faculty member conferred on possible content and topics for the course.

The constraints of physical distance between the co-teachers in the planning stage, and being assigned to a course that did not obviously lend itself to issues of linguistics and multiculturalism, presented challenges that required adjustment. Indeed, a variety of barriers may be present in cross-cultural teaching situations. The visiting lecturer and the students may lack shared knowledge. Curricular structures may be limiting due to required standards, the goals of the educational programme, and established course objectives. The teaching situation is also affected by cultural issues, which impact pedagogical approaches, teacher and student expectations, classroom interactions, the syllabus, and course assignments. Many of these elements were evident in the case study under discussion.

In spite of this, opportunities can be realized. These include co-learning among the teachers and trainees, which can address gaps in shared knowledge and cultural understanding as the host faculty member, visiting lecturer, and the teacher trainees negotiate learning. Similarly, adjustments can be made to the curriculum as the two faculty members work with trainees to move them beyond the local context to a broader international perspective, yet support required learning goals. The success of this endeavor depends on the willingness of all involved to take pedagogical risks, collaborate, and find a developmental platform through which transformation for all can occur. Figure 1 indicates major elements that impact the teaching and learning experience in cross-cultural contexts and potential opportunities.

Figure 1  Constraints and Opportunities in Cross-Cultural Educational Exchanges

4. Curricular Frameworks

Curriculum models in language teaching and higher education share commonalities (e.g., see Graves, 2009;
Hicks, 2007; Karseth, 2006; Richards, 2001). In essence, curriculum involves “who will be taught, what will be taught, how it will be taught, and how what is learned will be evaluated” (Graves, 2009, p. 115). Other considerations may include when, where, and why related to the learner and learning context (Hicks, 2007). Curriculum has also been represented as involving structure, content, pedagogy, and aims (Karseth, 2006). Curriculum typically involves a situation analysis (Richards, 2001), or consideration of the external and internal factors present in the environment for which the curriculum is designed. Models differ with some variation of components, but share key elements.

Curriculum may refer to an entire educational programme or a specific course (Graves 2009). Curricular development and implementation does not follow a linear, predictable pattern (Richards 1996) due to the variety of situational variables that may be present. Thus, frameworks for course design that can be adapted to address specific issues and decision-making needs are particularly beneficial to teachers (Graves 2009). Additionally, case studies that demonstrate processes for considering challenges, collecting information, examining theory, and utilizing experience are advantageous in helping others determine how to identify and apply strategies for curriculum or syllabus development in their own contexts (Richards, 2001).

Curricular planning involves an individual teacher’s values, experience, beliefs, and knowledge, and is influenced by interactions with other teachers and students in particular teaching contexts (Graves, 2009; Richards, 2001). These factors are highly relevant in international teaching exchange situations. Kumaravadivelu’s (2001) concept of a pedagogy of particularity focuses on these types of factors. It considers context and emphasizes that the curriculum must be reflective of a particular group of teachers, learners, and goals within both the institutional and sociocultural context. Particularity involves consideration of local contexts and lived experiences rather than generic knowledge obtained from teacher training courses. Finding a balance in managing what the teachers needed for their own context and maximizing the benefits of international teacher exchange was a relevant issue in this case study. At times, the pedagogy of particularity interfered with the goal to broaden the curriculum.

We next examine curricular factors in the co-teaching experience that affected the degree to which the course could benefit from the international expertise of the Fulbright lecturer. The lessons learned demonstrate the need for flexibility and collaboration among invested parties, and the importance of sharing insights into a variety of teaching contexts in order to identify strategies for curricular problem-solving and redesign.

5. Local Educational Context

The MEd programme in which the Fulbright lecturer and host country faculty member co-taught consisted of three areas of specialty from which trainees could choose: curriculum and instruction, ESL, or mathematics. The programme is based on a cohort model with a group of about 20 practicing teachers admitted each year. These teacher trainees enroll in courses together over a period of two years, in which time they can earn their degree. The students take one course scheduled in the evening during the school year, and two courses each summer. Due to the cohort model, the students develop close relationships. They know each other’s strengths and weaknesses and have shared learning experiences. Typically, they support each other and look forward to gathering for class. In some respects, the teacher who enters this situation is at a disadvantage, feeling like an outsider. Both the host country faculty member and the visiting lecturer experienced this to some extent.

The MEd programme was specifically designed with the demographics of a particular target group in mind—practicing K-12 teachers in the region. The development pattern for the initial curriculum was based on a
needs analysis that included what the teachers knew and could do at the start of the educational programme and what they would need to know and be able to do in their current teaching contexts in the region (see, e.g., Graves 2009). However, teachers also needed to prepare for demographic changes in the region, as mentioned earlier, thus future needs in terms of the ability to understand and support diverse learners was important.

5.1 Goals and Learning Outcomes

Although the objectives for the course were already established, they had been developed when the master’s programme had been proposed, four years prior to the co-teaching experience, and before the course had actually been taught. Thus, instructors who taught the course had the autonomy to modify them providing the revised objectives supported the overall intent of the course. The course level learning outcomes were as follows:

- Examine and construct a variety of assessment tools.
- Interpret scores from a variety of assessments.
- Use assessment information to evaluate the efficacy of district and school programmes and instruction.
- Use assessment data to plan instruction.
- Evaluate published assessments.

These goals as stated did not lend themselves to the types of opportunities depicted in Figure 1; as such, the curriculum needed to evolve.

5.2 Culture and Context-specific Knowledge: Internationalizing the Curriculum

While the changing demographics in the region appeared to be an excellent opportunity to expand the teachers’ perspectives about teaching and learning, the pedagogy of particularity (Kumaravadivelu 2001) in terms of a focus on local and immediate contexts and needs was evident in the trainees’ goals and expectations. Thus, culture and context-specific knowledge was a primary constraint in the teaching context and conflicted with the intent of the co-teachers to design a course rich in cultural exchange.

One of the most important points of reference for any course, and more so an applied one, is the shared knowledge of the teacher and student. Often, learning is influenced by the learners’ prior knowledge, and their attitudes to this knowledge: the inclusion or exclusion of this awareness influences a teacher’s instructional strategies.

Especially, in a teacher education course, the trainer usually has a thorough understanding of not only the background knowledge of the teacher trainees but also that of the components of their teaching contexts. He or she also knows what the trainees have studied before they joined the course, and these include syllabus, methods, assessment procedures, policies, and curriculum frameworks. There is also the strong likelihood of the trainer having gone through a similar schooling system and experienced practices that are a common inheritance. So, it is not unreasonable to assume that the trainer and the trainee are aware of the common concerns as well. In other words, the home university creates a platform where they both work with the help of their shared knowledge as a point of reference, and try to build on it. At every stage of the teaching learning process, this shared common awareness allows the trainer and the trainee to contribute meaningfully to the process of learning. The awareness is considered a given and used both unconsciously and consciously. Bagnole and Anderson (1995) highlight the importance of such awareness in their study of client centeredness in ELT training in a similar situation.

In contrast, the context-specific knowledge of the students at the host university is different from that of the visiting lecturer who may have very little familiarity of the context. More so, in a master’s course on education where all the students are in-service teachers, the visiting lecturer may need specifics. Problems get compounded...
if there is homogeneity and all the student-teachers work in the same district or state. This may even put both the parties at a disadvantage. First, the absence of differences in their situations encouraged the students to readily agree with each other and preempted the possibility of stimulating comparisons. Given the sharp focus of the course and the constraints of time, the visitor had very little scope for introducing anything which was not directly relevant to the trainee’s situation.

Secondly, the class had every reason to remain in their zone of familiarity. It must be mentioned that the end-of the course evaluation showed that none of the students tried to find out any information regarding the school situation in the visitor’s country. This was not surprising as they chose to evaluate situations they knew only too well and the course was too region-specific to encourage them to examine school situations elsewhere in the country. They were uncomfortable with any content and discussion that did not focus directly on their school situation. They lacked motivation to study anything new or possibly different. Within the objectives of the course and the context of their selective attention, the visitor had little opportunity to encourage them to move out of their comfort zone.

The situation may be best understood in comparison with the possibilities at the home university. The faculty member would have an in-depth understanding of the background knowledge and the career goals of students and this would have created innumerable occasions to wean the trainees away from selective attention, guide them through unfamiliar contexts and thus create a more challenging scenario and facilitate a wider perspective.

5.3 Curricular Structures: Collaborative Course Design

Given the competencies of the trainees as reflected in their classroom discussions, reflection papers and other assignments, it was evident the course could be more ambitious. One of the ways in which this may be done is to take the trainees into confidence and evolve a curriculum that would draw on the culture and context-specific knowledge of the visitor and the trainees both. This will create the foundation for the course, help them evolve the goals, and agree on the content and the methods of processing it. Interactions like this are likely to result in the emergence of international perspectives on the subject in question.

It is commonly known that the nature of the components of an educational programme such as the curriculum, learning goals, assessment, classroom practices, the roles of a teacher and a student, and materials differ from one institution to the other. Also, most decisions related to an educational programme are made by teachers, as found by Weimer (2002), who examined learning situations to determine the balance of control between teachers and learners. It may not be an exaggeration to say that such factors are most often determined by conventions. For example, the host university, in question, gave the student a detailed plan of the curriculum, materials, and assessment before the beginning of the course. Given the context, making or recommending changes of any kind, especially when they relate to the widening of the scope of the course, will demand several modifications which may not be agreeable to all. Students can be impatient with or indifferent to additions, and in-service teacher-students may resist change more than anyone else; more so, when they have been through two semesters already. They begin to be comfortable with the direction of the course and the expectations of the faculty.

Equally important is to note that a semester is too short to allow the visitor time to adjust to the situation, let alone make modifications after the course details are announced. When students begin to think that the curriculum meets with their immediate professional needs, the visitor will not be able to suggest changes that may demand a totally different approach from what has been followed so far. For example, when students are used to evaluating
programmes at the school level, they may not readily agree to evaluate educational programmes in higher education. Students will need time to appreciate any changes in the course which accompany changes in the expectations of the faculty, and hence changes in the nature of student work.

In other words, although a visiting lecturer might feel responsible to bring in modifications, it may not be possible to effect them for quite a few reasons. Primarily, a course is conceptualized as a part of a programme and especially, when it is offered in the middle of a programme like the course in question which is offered in the third semester of a two year programme. Secondly, the class’s perception of the goals of a programme is already determined when they reach the third semester. Especially for a stranger, it would need a good deal of time to guide them to understand the relevance of something which is not mentioned in the curriculum, and encourage them to connect it to their own contexts. Neither of them can be done without their consent and willingness to be open-minded.

Therefore, the host department may adopt a flexible, procedural approach to the drafting of the course and arrange for a week-long interaction and discussions among their faculty, visiting scholar, and the students. The week may be considered as part of the course as it would be spent in academic pursuit as they consider various options and arrive at an understanding of the goals and expectations. While evolving the syllabus, the visiting faculty member and the students will have opportunities to understand each other as human beings and academics. Without this understanding, an academic programme will have limited success. In the context of designing courses in law, Hess observes that “syllabus construction with students helps the teacher set a tone for the course of mutual respect, commitment, engagement, and collaboration” (2008, 387). This, in turn, will build trust between them and enhance the quality of their interaction.

5.4 Teacher and Learner Expectations: Finding A Developmental Platform

More often than not, there are differences in the expectations of a teacher and the class in the context of the aims, prescribed reading, evaluation procedures, and instructional strategies. While young students depend on their parents to negotiate with the teacher, adult learners try to resolve the issues themselves at the university level. In any case, when they share context-specific knowledge and culture, they are likely to arrive at an understanding soon.

A visiting context is more complex as it involves differences in personalities and academic approaches. There may be institutional bottlenecks also. Context-specific knowledge, as mentioned earlier, plays a crucial role in determining an individual’s expectations, and the goals of the academic programme. Given the situation, it is essential that the visiting faculty member and the students discuss their expectations with regards to the course and identify common concerns before beginning the course itself.

Ideally, an international award like the Fulbright visiting lecturership brings two very different worlds together, the host’s and the visitor’s, in an effort to develop not a few individuals but societies. In order to achieve this aim, a developmental platform has to be created. This is possible only with the cooperation of the individuals and institutions concerned.

Most often, the visit is perceived only as a teaching opportunity for the awardee. In fact, it is a critical learning opportunity for everyone engaged, directly and indirectly, in the interaction: visiting faculty, host institution, and the students. Each one of them is likely to acquire fresh perspectives on not only the subject and pedagogy but also themselves. The participants will become consciously aware of the need for a critical, reflective outlook only when they are encouraged to articulate their expectations. The process, if begun early, will motivate
Bain’s (2012) deep learners who engage with concepts and work towards transformation, to contribute richly and meaningfully towards building a long-term learning network.

In sum, a flexible curriculum development framework must be adopted, and the course evolved together by the host department, visiting faculty and the students in order to realize the full potential inherent to a visiting context.

6. Implications and Conclusions

This case study demonstrates the complexity of international educational exchange in terms of curricular structures and their inherent constraints. While the co-teaching experience was a positive one, and the students thoroughly enjoyed the contributions of the visiting scholar, the focus on the local, educational context, the trainees’ expectations, and the lack of shared educational background were challenges that limited the learning outcomes. Although the course structure, assignments, materials, and evaluation practices were reflective of the goals of the programme and the students, and recognized both the institutional and sociocultural contexts, they conflicted with the aims of the host country faculty member and visiting scholar to broaden and deepen the learning experience. Thus, a more collaborative approach upfront characterized by collective course-building and syllabus development among the teachers and teacher trainees is strongly recommended to negotiate goals and expectations and realize a common understanding.

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Post Modernity and Creation of Knowledge

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Abstract: This paper aims at reflecting on the role that we are expected to play as a unit of research in education. Starting from the initial definition of knowledge and the confrontation of rationalist and empiricist positions on how to access to it, the paper seeks to work on the understanding of knowledge originated from the scientific revolution of the sixteenth century, in order to merge in the current context of postmodern paradigm shift and bring out what we are expected to do with. What is the main purpose of research? Is it used to draw the same conclusions previously found out? Is it used for the reproduction, confirmation and dissemination of knowledge already created? Or for the formation of a knowledge that brings something new, that really contributes to the improvement of education?

Key words: knowledge, paradigm of complexity, post modernity

1. Knowledge as A Justified True Belief

The issues related to the nature of knowledge (what is it?) and the ways to access to knowledge (how do we get to it?) are as old as the philosophy itself, leading us naturally to the field of the epistemology. However, we can agree that these issues were first formally addressed by Plato, in one of his Dialogues, the Theaetetus (Bostock, 1991; Waterfield, 1987). Who was Theaetetus? He was a brilliant young man, student of the famous mathematician Theodorus of Cyrene. Plato put Theaetetus dialoguing with Socrates and Theodorus. Faced with the question “What is knowledge?” Theaetetus started listing a series of subjects, such as geometry, astronomy, arithmetic, arts and crafts.

Socrates then refined the question: “But what is knowledge itself?” The issue is much more complex, since in Greek as in English, there is just one word, contrarily to what happens in Portuguese (“saber” and “conhecer”) or in French (“connaître” and “savoir”), for example. In this dialogue, Socrates presented a tripartite division of knowledge:

(1) Knowing an object (a person, a thing): knowing by contact, corresponding to “conhecer” and “connaître”;  
(2) Knowing how (knowing how to do things): knowledge of skills;  
(3) Knowing that: a propositional knowledge.

The Dialogue went on focusing on this third dimension, referring to “saber” and “savoir”. It is also on this dimension that we are interested to analyse here.

Theaetetus continued to reflect on this type of knowledge making use of the Maieutics, which Socrates refers to as the work of a midwife who helps a woman give birth. Apart from the association of knowledge to perception,
given the argument that a breath of wind can cause a chill to someone who is more sensitive to cold than to another person, they focus themselves on knowledge as belief: we must believe in what we think we know. And then, he continues to reflect, it is necessary that this belief is true. However quite often, it is proved that what we thought to be true is not after all. We must therefore justify such a supposedly true belief. So the justification is the third condition of knowledge. Deductive, inductive or adductive arguments are necessary to configure the existence of the knowledge we are now writing about. As a belief (1) which is true (2) and justified (3). “The preliminarily standard definition is that knowledge is a justified true belief” (Grayling, 1996, p. 37).

2. Access to Knowledge

Not everything is as easy and straightforward as presented above. Abstractly speaking, and since every belief is based, in chain, on each other, there will be a point where you can no longer go further, because it is not possible to scrutinize any other justification in the end. We say here that these beliefs are self-justified, or self-evident: we are then at the level of the foundational beliefs, that is to say, the origin of everything, namely the myth of the datum, of the pure datum. And then we can question about whether there is or there is not a prior knowledge...

In fact we can only say that we do not know something, if we know something. But has knowledge existence regardless the human being who wants to achieve it? Is knowledge just waiting to be discovered? How do we get to it then? Or is knowledge a reality constructed by the subject?

Throughout the history of the epistemology, we have been confronted with two schools of thought: rationalism and empiricism. For the “rationalists”, the objects of knowledge are propositional, that is to say, they are truths that are achieved by rational, logical-mathematical inferences, by the reason. The only sources of knowledge are the ideas of the intrinsic reason, as reflected in the syllogistic reasoning, for example, where the major premise is a “kind of self-evident and undeniable statement regarding a metaphysical truth or a dogma” (Sousa, 2000, p. 19). In this case, mathematics and logics are the core disciplines necessary to achieve this knowledge.

As for the “empiricists”, what counts are the natural sciences, with their procedures of observation and experiments. For them, one comes to the truth by experience, by the senses, although they recognize some limitations in this approach: the colour, the taste, the smell, the sound, the texture, etc., of an object vary according to the condition of the subject who perceives it, or the conditions under which the object is perceived. Depending on the distance a certain object is from the observer, it may look greater or smaller. For a warm hand, warm water will be cold, but for a cold hand, it will be hot. The grass is green during the day but at night it seems predominantly black. To overcome this perceptual relativity, some instruments are created, such as microscopes or telescopes as more refined extensions of the human senses. Over time, these two groups have struggled over about the nature, the origin and the reliability of knowledge.

The Aristotelian and medieval knowledge was used to view everything that was not exclusively based on the reason with despise. The knowledge used for practical resolution of problems of day-to-day had not the status of scientific knowledge. This would be an ordinary or usual knowledge, at the level of common sense: irrelevant, illusionary and false.
3. Modern Scientific Knowledge

The decline of the idea of the Earth as the centre of the universe has shaken the current esoteric conceptions, triggering a revolution in the way of organizing men’s way of thinking and reading the reality. Modern science, born with the scientific revolution of the sixteenth century, brought another kind of rationality to access to knowledge

“... represented by Copernicus's heliocentric theory of planets motion, Kepler’s laws about planets orbits, Galileo’s laws on the bodies falling, the great synthesis of Newton’s cosmic order and finally the philosophical awareness given by Bacon and particularly Descartes” (Sousa Santos, 1987, p. 3).

The Aristotelian deductions started to be refuted. In the Preface to Novum Organum, Francis Bacon (2002) shows the relationship between these two types of approach to knowledge (rationalism and empiricism), emphasizing the primacy of knowledge that enables action.

“... But if there be any man who, not content to rest in and use the knowledge which has already been discovered, aspires to penetrate farther; to overcome, not an adversary in argument, but nature in action; to seek, not pretty and probable conjectures, but certain and demonstrable knowledge—I invite all such to join themselves, as true sons of knowledge, with me, that passing by the outer courts of nature, which numbers have trodden, we may find a way at length into her inner chambers” (Bacon, 2002).

In one of his Aphorisms on the Interpretation of Nature and the Kingdom of Man (Aphorism X), Bacon states as follows: “The subtlety of nature is greater many times over than the subtlety of the senses and understanding; so that all those specious meditations, speculations, and glosses in which men indulge are quite from the purpose, only there is no one by to observe it” (Bacon, 2002). Later in Aphorism LXXI, picking up the prophecy of an Egyptian priest about the Greeks, Bacon compares them to children:

“they were always boys, without antiquity of knowledge or knowledge of antiquity. Assuredly they have that which is characteristic of boys: they are prompt to prattle, but cannot generate; for their wisdom abounds in words but is barren of works” (Bacon, ibid.).

For this reason an objective and factual knowledge is aimed at, a palpable knowledge with no interference of human values or religious beliefs. And if it is true that modern science raised the man to the place of an epistemic subject, the fact is that the same science expelled him from the scientific area, viewed as an empirical subject, as it did it to God beforehand.

This new scientific rationality aims at isolating the researcher, observer and theorist, from his/her object of research, in favour of a knowledge the most possibly objective, not permeable by human emotions. It is then recommended the “inductive method, which means the use of multiple observations of the phenomena and not religious assumptions or other kind of authority to reach conclusions or generalizations” (Sousa, 2000, p. 19). The observation of natural phenomena should be free, non-committed and systematic, bearing an attitude of permanent distrust of the evidences generated from the immediate experience.

Against the uncertainties of the reason based just on itself, there seems to oppose, as we see, the certainty of the experience, ordered by the following well-defined steps: (1) Problem Identification; (2) Hypothesis formulation; (3) Data Collection; (4) Collected data Interpretation; (5) Drawing of conclusions; (6) Confirmation, rejection or modification of the hypothesis.

In this new type of scientific rationality, the “ideas” are not ignored. They configure the hypothesis, not as an
assumed truth at the departure (the major premise) but as a question to be ascertained by observation and experimentation. Boaventura Sousa Santos gives the example of Descartes, as someone who “goes unequivocally from the ideas towards things rather than from the things to the ideas, giving priority to the metaphysics as the ultimate foundation of science” (Sousa Santos, 1988, p. 4). In his speech at the solemn opening of classes in the University of Coimbra in the academic year 1985/86, entitled “A Discourse on Sciences”, this sociologist drew our attention to the mathematization and quantification of the modern scientific knowledge:

“The ideas that enlighten the observation and experimentation had to be clear and simple: because from them one can ascend to a deeper and rigorous understanding of nature. These ideas are the mathematical ideas. [...] From this central place of mathematics in the modern science derive two main consequences. Firstly, the quantification: to know means quantifying. The scientific rigor is determined by the rigor of the measurements. The intrinsic qualities of an object are, so to speak, disqualified and replaced by the quantities that could eventually translate them. What is not measurable is scientifically irrelevant. Secondly, the simplification: the scientific method is based on the reduction of the complexity” (Sousa Santos, 1988, pp. 4–5).

And this happens in a context of stability and constancy, in the presupposition of an absolute order that rules over all things in the universe, a context in which it would be possible to predict future situations based on the explanation of present situations, or provide for situations there, on the basis of situations here. As Sousa says,

“Basically, we were witnessing the affirmation of the nomothetic sciences able to explain and foresee general laws: faced with similar conditions, the same results would occur whether here or there, whether they were yesterday, today or tomorrow. This universal and timeless determinism made everything seem extremely simple and transparent” (Sousa, 2000, p. 21).

Modern scientific knowledge thus assumes a functional and utilitarian dimension aiming not so much at understanding the essence of nature, but at knowing it in order to dominate and transform it.

It is then understandable why all hopes for the resolution of natural and social problems that plagued the world were laid on this scientific knowledge. There is an absolute belief that we will reach the final and ideal stage of the evolution of the humanity. We have some examples to be reflected on. The theories of Auguste Comte (1798–1857) on the positive social state is one example of this general belief, as the stage reached after having already overpassed the previous theological and metaphysical states; also the theories of Herbert Spencer (1820–1903) on the industrial society, overpassed the simple, double and triple composite societies and those mainly military ones, with the understanding of the industrial society as the most civilized and evolved one, based not only on its form of organization and division work, as also on the decentralization policy and the idea of State serving the citizen, the representative government and free initiative, religious freedom and monogamy, among other things. We can also mention the theories of Èmile Durkheim (1858–1917) on organic solidarity through the division of work, which in his view, would make the individuals become interdependent, cohesive and supportive, not by family, religion, customs or traditions, as in the type of mechanical solidarity characteristic of pre-capitalist societies, but because, like a biological organism, where each organ has a function and depends on others, in society too, each individual would have a specific function, needing others for other functions. That is what, in his view, would generate solidarity among men.

And why not to mention the theories of Karl Marx (1818–1883) on the class struggle as a way of destroying capitalism and replacing it with socialism, as a trend towards a more humanistic social and historical development?
These theories are good examples of the optimism modernity started to congregate in his break with the dark medieval past, in which everything was due to one single and supernatural cause. It is this modernity that, imbued with a desire of transparency and simplification, as reflected in the decomposition of the whole into parts, or in the Cartesian separation between subject and object (*egocogitans* and *res extensa*), denying subjective emotions, seeks to formulate general laws at the light of observed regularities. This modernity is characterized by A. Hargreaves as

> “a social condition that is both guided and sustained by enlightened beliefs in rational scientific progress, the triumph of technology over Nature and the ability to control and improve the human condition by applying all this scientific knowledge and technological expertise to the field of social reforms” (Hargreaves, 1998, p. 9).

### 4. Scientific Knowledge in the Context of Post-Modernity

The “black and white” thought organization to achieve scientific knowledge, in the line of a cause-effect or stimulus-response mechanistic and deterministic logic starts, however, being undermined by the recognition of the complexity of the phenomena to be studied, in a trend curiously initiated at the level of the hard sciences.

If Sir Isaac Newton (1642–1727) had dared to go beyond the distinction between Heaven and Earth, seeking to show that the laws that governed the celestial sphere were the same kind of those causing the fall of an apple, was not able, however, to abandon the static cosmic vision of the galaxy—The Milky Way as the entire universe—which remained rooted in the minds of scientists until the twentieth century. One had to wait until Edwin Hubble (1889–1953) demonstrated in 1929 that, after all, the universe is constantly expanding: the conclusion was drawn from the finding of nebulae in other galaxies moving away from us at tremendous speeds. This discovery raised the question about the origin of the universe, giving bases to the Big Bang theory formulated by Georgy Gamow (1904–1968), a Russian-born American physicist.

Nevertheless it will be Albert Einstein (1879–1955), who initially resisted to the idea of a cosmic origin, to question Newton’s independent concepts of space and time, presenting the idea of space-time as one geometric entity, with his theory of relativity (special relativity in 1905 and general relativity, in 1915, this latter adding the effects of gravity to the former).

Gaston Bachelard (1884–1964), when referring to the era of new scientific spirit in contrast to the pre-scientific and scientific ones, clearly says:

> “Nous fixerions très exactement l’ère du nouvel esprit scientifique en 1905, au moment où la Relativité einsteinienne vient déformer des concepts primordiaux que l’on croyait à jamais immobiles. À partir de cette date, la raison multiplie ses objections, elle dissocie et réapparente les notions fondamentales, elle essaie les abstractions les plus audacieuses. Des pensées dont une seule suffirait à illustrer un siècle, apparaissent en vingt-cinq ans, signes d’une maturité spirituelle étonnante” (Bachelard, 1993, p. 7).

They are for instance the quantum mechanics of Max Planck (1858–1947) and the probabilistic theories, the wave mechanics of Louis de Broglie (1892–1987), the correspondence and complementarity theories of Niels Bohr (1885–1962) and the uncertainty principle of Werner Heisenberg (1901–1976) and many others who have brought a new conception of physics which already contemplates the irregularities, disruptions and disintegrations, and acknowledges the inevitable interference of the subject in the observation, striking down the absolute vision of what is “reality”.

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Thus science itself is re-signified, the same way as the access to knowledge, in a rupture with the prevailing paradigm, understanding it as “... what the members of a scientific community have in common” and meaning scientific community as “... people who share the same paradigm” (Kuhn, 1983, p. 240). Incidentally, Thomas Samuel Kuhn (1922–1996) brings a new vision onto the development of science, by arguing that it does not evolve gradually and cumulatively, but through abrupt changes of paradigms.

This position makes us look at science differently and raise questions on scientific theories: Are they descriptions of the “reality”? Or are they just instruments that allow us to better understand the “reality” until other better explanations emerge? According to Karl Popper (1902-1994) “all science is based on quicksand”. His principle of falsifiability underlines the idea that a theory is scientific only if it can be rejected. “Je les conçois les théories scientifiques comme autant d'inventions humaines, comme des filets créés par nous et destinés à capturer le monde” (Popper, 1984, p. 36).

The philosophy of mathematics itself, from the incompleteness theorem (also called theorem of un-decidability) of Kurt Gödel (1906–1978), recognizes that the measurement accuracy of mathematics, like any other form of accuracy, is always based on a selectivity criterion. Someone has always to “subjectively” select the “objective” criterion.

There arises a new relative and complex order, which spreads from the physical and natural world to the human and social world. “It’s a new order, where it will be very difficult to accept simplistic and dichotomous divisions, I would say a Cartesian order divided into reason on the one hand, and emotion on the other, into right on the one hand and left, on the other, into man on the one hand, and woman, on the other, into black, on the one hand, and white on the other. Rather, we are now experiencing the time of ethical, philosophical, political and ideological mestizage” (Sousa, 2009, p. 3).

In this context, the book by Jean-Francois Lyotard, “La condition postmoderne”, is published in 1979, laying the foundations for thinking about (scientific) knowledge in the new era we now live. “Our working hypothesis is that the status of knowledge is altered as societies enter what is known as the postindustrial age and cultures enter what is known as the postmodern age” (Lyotard, 1984, p. 5). Being a pioneer in the use of this term and featuring the “knowledge” as a kind of scientific discourse, Lyotard faces postmodernism as the end of meta-narratives. What does he mean with this? For him, meta-narratives are the major explanatory schemes of the world we can find whether in ideology or totalitarian systems of knowledge as it is the case of science in fact. And he blames science for this reason. The absolute truths and the idea of science as the “source of truth” are now refuted.

Even if we do not discuss the difference between the concepts of postmodernism and postmodernity, we would like to think about the meaning of postmodernity in the following terms: rupture or evolution of modernity?

For A. Hargreaves (1998), post-modernity is “a social condition that includes particular standards of social, economic, political and cultural relationships”, while postmodernism is an “aesthetic cultural and intellectual phenomenon, embracing a particular set of styles, practices and cultural forms evident in art, literature, music, architecture, philosophy and in a more global intellectual discourse” (p. 43).

Anthony Giddens, for example, believes that the transitions that have occurred “should rather be seen as resulting from the self-clarification of modern thought, as far as the remains of tradition and providential views are being removed” (Giddens, 2000, p. 35). He says “We have not come beyond modernity, we are living precisely a phase of its radicalization” (ibid.) When Gilles Lipovetski (2004) prefers to use the term hypermodernity instead postmodernity, he wants to convey the idea that there was not a break with modernity yet,
as the prefix “post” implies, but an accentuation of typical characteristics of modernity, such as the individualism, the consumerism, the hedonism, etc.

But either you call it post-modernity (Lyotard, 1984), or radicalized modernity or late modernity (Giddens, 2000), liquid modernity (Bauman, 2006) or hypermodernity (Lipovetsky, 2004), among other designations, what is true is that we are living in a time marked by dizzying acceleration of change at all levels under the umbrella of information technology and communication, which have brought a new meaning to globalization. We are living an era marked by the collapse of the components that shaped modernity. Stability, permanence, security and certainty are hardly words that fit into our everyday lexicon nowadays.

And if we consider the relationship between language and thought, we would say that the postmodern mental organization is based on the so-called “absolute relativism”, on the systematic doubt against “universalizing presumptions” (Lyotard, 1984), in a permanent questioning of the neutrality and the universality of the reason, because “the postmodern world is fast, compressed, complex and uncertain” (Hargreaves, 1998, p. 10).

In this environment of uncertainty, complexity and chaos, Sousa Santos (1988) presents the emerging paradigm through a set of presumptions followed by a justification to characterize the knowledge. Let us reflect on these sentences which are titles of sub-chapters notably developed:

1. All natural-scientific knowledge is social-scientific;
2. All knowledge is local and total;
3. All knowledge is self-knowledge;
4. All scientific knowledge aims to become common sense.

How far are we then from the knowledge as “a justified true belief” referred at the beginning of this article? How much do we believe in knowledge? How much this empowers the belief? What is the truth in this context? And where are the fundamentals that ground the truth?

Paul Feyerabend (1924–1994), with his famous “Against Method”, brings the anarchist vision of science, rejecting the existence of universal methodological rules for considering them elitist and even racist. It is interesting to know that this book was born from a project initially conceived by himself and Lakatos, to be entitled “For and Against Method”, where each one would have the responsibility to defend his position: a position in favour of a rationalist view of science, by Lakatos, and a position against it, by Feyerabend. However, the premature Lakatos's death in 1974 prevented them to successfully complete this plan, only remaining Feyerabend's “methodological anarchy”.

He asks the reason why the effectiveness of the rain dance or the astrology is denied because they are not supported by scientific research. In his view, science is becoming as much repressive as an ideology, face to other alternative routes (traditional or not). And if science was liberating, in the beginning, it must not imprison us now in a supposedly scientific dictatorship.

We see that this is the trend that pervades our times. We see that in this new context of paradigm shift, knowledge comes to us somehow fluid, discontinuous, ephemeral, unpredictable and chaotic! Boundaries between what is scientific knowledge and common sense are not clear the same way as the boundaries between the physical and natural sciences and the humanities and social sciences. There are not clear boundaries between different disciplines, and even less boundaries between the subject who investigates and the subject/object to be researched...
5. What About Scientific Knowledge in Education in This Scenario?

For a R&D Unit, as is the Centre for Research in Education of the University of Madeira, the issue of scientific knowledge is of utmost importance, particularly in such a sensitive area as the education, which had to struggle against all in the past for its affirmation at the scientific level, firstly in the debate with the natural and exact sciences, and later with other social and human sciences. It is not possible to ignore all the signs of our contemporary times.

When analyzing our object of knowledge, that is to say, the educational phenomenon, Sousa (2000) places it in the paradigm of complexity (Morin, 1990), with all those signs of the paradigm shift mentioned above. She characterises our object of study this way:

1. It is global and systemic;
2. It is unique and specific;
3. It is procedural and dynamic;
4. It is uncertain and unstable;
5. It is personal and subjective.

That is, the post-modern scientific knowledge in education is total: It is not possible to parcel it in separate subjects. Any analysis of an educational act needs a multitude of references from diverse fields ranging from history to philosophy, from psychology to sociology, from economics to policy, from methodologies to practice: any scientific analysis in education needs a multi-referential vision (Ardoino, 1993). Taking into account the overall dynamics of a system, any intervention in one subsystem echoes in all the others. A system is characterised by the existence of networks of relationships with “qualities of wholeness, interdependence, hierarchy, self-regulation, environmental exchange, balance, adaptability and equi-finality” (Littlejohn, 1982, p. 33) that configure a system. Knowledge in education is therefore global and systemic.

The post-modern scientific knowledge in education has to do with a certain situation, certain place and certain players, *hic et nunc*, without pretensions to generalization. Instead of large groups it is interested in the study of small communities, a school, a class, a group of teachers, or a single teacher. The case study is so privileged, understanding the experience as unique and unrepeatable. It is not possible to extrapolate the results of a certain research to other contexts. The sample therefore loses its raison d'être. Knowledge in education is therefore unique and specific.

The post-modern scientific knowledge in education is no less demanding in the understanding of its object, since it requires a historical overview of the ecological context, from the past, because any situation, the most concrete it may be, is shaped by its historical and anthropological roots. It is no longer possible to delineate with rigor the precise temporal boundaries of a particular event, or to cut the dynamics of educational phenomena in well-defined slices. You must know the life stories to get to the meaning of an educational phenomenon, because this is a procedural and dynamic object of knowledge.

The post-modern scientific knowledge in education does not give us absolute certainty or securities that previously the impersonal, anonymous and superior determinism did. It is not through the data quantification and the measurement accuracy and its statistical analysis, that we conclude on the truth of the facts observed. The permanent falsification of conclusions in the research findings is what opposes science to beliefs and religious or ideological dogma. Therefore we say that knowledge in education is uncertain and unstable.
Finally (last but not least), we argue that post-modern scientific knowledge in education takes the subjectivity of the researcher as a tool for research, emphasizing the perceptions, conceptions and representations not only of himself, but those of the subjects of research, trying to catch the meanings given by them to the observed situations, opening the way for methodologies of ethnographic approach and action research in education. We say, therefore, that knowledge in education demands personal and subjective implication of the researcher.

To this extent, we come to the point that concerns us as a Centre for Research in Education: what is the ultimate goal of research? Does it serve to reach the same conclusions already discovered? Is it for the reproduction, confirmation and dissemination of knowledge already created? Or for the generation of a knowledge that brings something new in order to effectively contribute to the improvement of education?

It is not by chance that the Portuguese Foundation for Science and Technology (FCT), that supports this Centre, states as its mission the following:

“The mission of FCT consists in continuously promoting the advancement of scientific and technological knowledge in Portugal, exploring opportunities that become available in any scientific or technological domain to attain the highest international standards in the creation of knowledge, and to stimulate their diffusion and contribution to improve education, health, environment, and the quality of life and well-being of the general public.”

The question is whether the ultimate goal of creating knowledge for the improvement of Education may or may not abdicate of methodological rules, as Teresa Estrela warns us, when she says:

“[…] The weakening or abolition of the validity criteria not only reinforces the trend to ideological discourse and the politicization of science as it gives sciences of education a dubious negative legitimacy. […] Moreover sciences accused of lack of rigor, may now be tempted or legitimated to any kind of impressionism and abandon any sort of accuracy, since without rules there are no transgressions.

And this is, in my opinion, one of the biggest traps in which sciences of education can fall. Not having behind the scientific status and social recognition that psychology, sociology and other social sciences have gained, we cannot afford to fall into an undifferentiated understanding, in a field that belongs to everyone and no one and where everything is equally valid, since it represents the unique experience of an individual builder of reality and knowledge” (Estrela, 2008, p. 26).

But that is not what we want! We do not want lack of rigor, or undifferentiated knowledge which merges with impressionism and common sense, making education a “no man’s land” where everyone, regardless of their training, has the right to say their opinion from the cathedra and their niches of power, without any need of foundation. When Sousa Santos (1988), to underscore the precariousness of science in the Popperian sense, states that “all scientific knowledge is intended to become common sense”, he is not claiming that common sense becomes a scientific knowledge.

The rigor we all desire in the creation of scientific knowledge in our area will rise, in my view, from the awareness that scientific knowledge in postmodern education is no longer an absolute and simple, aseptic and decontaminated knowledge. Only this way the researcher will resist being a mere plaything of external forces in the definition of education. That’s what we want: a clarifying, instead of sticking our heads in the sand, as if no winds of change were blowing.

References


The Impact of Special Education Curriculum on Affective Dispositions of Student-Teachers in the University of Jos, Northern Nigeria

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Abstract: The paper examines the impact of special education curriculum on affective dispositions of student-teachers in the University of Jos, Nigeria. The purpose of the study was to ascertain the impact of special education curriculum on affective disposition of student-teachers in the areas of empathy, compassion and appreciation of cultural diversity including gender factor, research question was posed and two hypotheses were postulated. The design was evaluative using cross-sectional design. The populations of the study were the special education students. 200 subjects were selected through stratified techniques. The University of Jos Campus Climate Rating Scale (UJCCES) was used as instrument for data collection. The data were administered and analyzed using simple percentage and one way analysis of variance (ANOVA). Results revealed significant impact of special education curriculum on empathy, compassion and appreciation of cultural diversity among student-teachers towards students with special needs. Females students exhibited high empathy and compassion dispositions than their males counterparts while the males demonstrated more appreciation of cultural diversity than their female peers. The study concluded that the special education curriculum promotes effective dispositions of student-teachers to persons with special needs.

Key words: impact, special education curriculum, University of Jos

1. Conceptual Framework and Background

The fundamental principle of inclusive schooling is that students with special needs should learn together, wherever possible, regardless of any differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating uniqueness of each student’s rate of learning and ensuring quality education to all through appropriate curricular, organizational arrangement, teaching strategies and affective dispositions to students with special needs. The special education curriculum adopts the regular school curriculum with some modifications called the “curriculum plus and minus” (Obani, 2006) based on the nature and degree of disability present in an individual or group of individuals. While the curriculum plus deals with the unique problem areas of a student with disability through addition of other contents, the curriculum minus emphasizes areas that should be removed in the child’s curriculum because of identified disabilities.

Therefore, special education curriculum apart from preparing students to become professional teachers also...
ensures that they understand different disability areas and appreciate the plight of students suffering from one form of disability or the other. It is believed that the special education curriculum contents enable the students to show some levels of refined affective dispositions towards students with special needs. Students with special needs are exceptional persons who deviate significantly from the norms in terms of their abilities (Giftedness) and disabilities (handicapping conditions). On the other hand, affective dispositions has to do with the manner in which teachers and students deal with issues emotionally, such as empathy, compassion and appreciation of cultural diversity which may be acquired through special curriculum (Banks, 1977).

Empathy is the ability to connect one’s emotions to that of another. Goleman (1995) stated that empathy is the ability to imagine oneself in another’s place and understand the other’s feelings, desires and action. The issue of gender difference in affective dispositions is quite controversial. It is often believed that females are more empathetic than males. Though, this cannot be the case all the time because males are also empathetic (Dalyop, 2012).

Compassion involves the concern for those who suffer or are vulnerable and the motivation to enhance the welfare of others. Mikulincer and Shaver (2005) observed that compassion emerged evolutionarily as part of care-taking system oriented towards those who are in need. The most important elicitors of compassion are visual and auditory cues. It is a virtue that means grief, suffering together with another. It comprises of both benevolence and universalism involving understanding, appreciation, tolerance and protection for the welfare of others (Schwartz, Melech, Lehmann, Burgess, Harris, & Owens, 2001).

Cultural diversities on the other hand, recognizes the home background of each student within the school system. Kommers, Janassan and Mayas (1992) opined that one of the most enduring successes of the school system is the variety of cultures that meet and co-exist freely. In classroom and after classroom, students of different cultural background study together, mingle and relate with one another. This means that appreciation of these affective dispositions through instructions from the special education curriculum contents among students may vary. Thus, this study intends to evaluate the impact of special education curriculum on affective dispositions of student-teachers in the University of Jos, Nigeria.

2. Statement of the Problem

The University of Jos, Nigeria offers special education and rehabilitation sciences programmes. The contents of the programmes address the issue of affective dispositions to students with special needs. However, exhibiting the variables of empathy, compassion and appreciation of cultural diversity to students with special needs is bedeviled by attitudinal problems. Students with special needs experience little or no care from their counterparts who are non-disabled. Similarly, the issues of tolerance, provision of support and respect for their human rights are fragrantly violated and the facts that the students come from different cultural backgrounds make their attitudes towards students with special needs to vary either positively or negatively.

2.1 Purpose of the Study

The purpose of this study is to examine the impact of special education curriculum on affective dispositions of students in the University of Jos, Nigeria in terms of empathy, compassion, appreciation of cultural diversity and gender differences among first and final year special education students.

2.2 Research Question

What is the level of special education curriculum of 100 and 400 levels students’ affective dispositions in the
areas of empathy, compassion and appreciation of cultural diversity?

2.3 Research Hypotheses

(1) There is no significant difference in empathy; compassion and appreciation of cultural diversity mean scores of 100 and 400 levels special education students in their affective dispositions.

(2) There is no significant difference in the mean scores of males and females special education students in their affective dispositions in the areas of empathy, compassion and appreciation of cultural diversity.

3. Methodology

3.1 Design

This study is evaluative in nature using cross-sectional design to examine the impact of special education curriculum on affective dispositions of student-teachers in the University of Jos, Nigeria. The study is also aimed at finding out the impact of special education curriculum on gender affective dispositions of students, in the areas of empathy, compassion and appreciation of cultural diversity. His was carried out through ex-post factor design.

3.2 Sample

The population for this study was special education students in the Faculty of Education, University of Jos, Nigeria. The levels studied are 100 level special education students on admission before they were exposed to the special education curriculum and 400 level special education students at the end of their programme when they had fully been exposed and completed the curriculum. A sample of two hundred (200) subjects participated in the study. Similarly, stratified sampling technique was used to select subjects from the population.

3.3 Instruments

The University of Jos Campus Climate Rating Scale (UJCCRS) was used as instrument for data collection. The questionnaire contains 10 items in each area of empathy, compassion and appreciation of cultural diversity, totaling 30 items, probing different affective dispositions. Content validation of the instrument was obtained using the judgments of three lecturers, two in special education and one in test and measurement. The scaling was as follows: Not at All (1), Little (2), Some What (3), Much (4), and Very Much (5). The rating scale was as follows: 10–29, low; 30–39 Average’ and 40–50 high. This rating scale was used as the criteria for judging the affective dispositions of the students.

3.3 Method of Data Collection and Analysis

The special education in the Faculty of Education, University of Jos students were sensitized on the modality for filling the questionnaire after which the UJCCRS instrument was administered on the students to ascertain their affective dispositions towards students with special needs. The students’ responses were collated organized and analyzed using mean scores, standard deviation and t-test for independent sample. The group mean was adopted to summarize responses in the affective dispositions of the students.

4. Results

The results of the analysis of data are presented in Table 1:
The Impact of Special Education Curriculum on Affective Dispositions of Student-Teachers in the University of Jos, Northern Nigeria

Table 1  Percentage Distributions on Levels of Empathy, Compassion, and Appreciation of Cultural Diversity Dispositions of 100 and 400 Levels Special Education Students

<table>
<thead>
<tr>
<th>Levels Range</th>
<th>Empathy 100 Level</th>
<th>Compassion 100 Level</th>
<th>Appreciation for Cultural Diversity 100 Level</th>
<th>Empathy 400 Level</th>
<th>Compassion 400 Level</th>
<th>Appreciation for Cultural Diversity 400 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>10-29</td>
<td>39 (78%)</td>
<td>38 (76%)</td>
<td>'01 (02%)</td>
<td>'02 (04%)</td>
<td>'01 (02%)</td>
</tr>
<tr>
<td>Average</td>
<td>30-39</td>
<td>11 (22%)</td>
<td>11 (22%)</td>
<td>16(32%)</td>
<td>12 (24%)</td>
<td>07 (14%)</td>
</tr>
<tr>
<td>High</td>
<td>40-50</td>
<td>-</td>
<td>01 (02%)</td>
<td>33 (66%)</td>
<td>36 (72%)</td>
<td>42 (84%)</td>
</tr>
<tr>
<td>Total</td>
<td>50 (100%)</td>
<td>50 (100%)</td>
<td>50 (100%)</td>
<td>50 (100%)</td>
<td>50 (100%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

N = 200

Table 1 shows percentage responses of special education students according to their levels of affective dispositions in empathy, compassion and appreciation of cultural diversity. 41 (82%) of the 100 level students have low empathy disposition of special education curriculum, while 9 (18%) have average dispositions and none of the students exhibited high affective disposition. 39 (78%) of the 100 level students have low compassion disposition of special education curriculum, while 11 (22%) have average dispositions and none of the students exhibited high affective disposition. 38 (76%) of the 100 level students have low appreciation of cultural diversity disposition of special education curriculum, while 11 (22%) have average dispositions and 01 (02%) of the students exhibited high affective disposition.

Similarly, 1 (02%) of the 400 level students have low empathy disposition of special education curriculum, while 16 (32%) have average dispositions and 33 (66%) of the students demonstrated high affective disposition. 02 (04%) of the 400 level students have low compassion disposition of special education curriculum, while 12 (24%) have average dispositions and 36 (72%) of the students demonstrated high affective disposition. 01(02%) of the 400 level students have low appreciation of cultural diversity disposition of special education curriculum, while 07 (14%) have average dispositions and 42 (84%) of the students exhibited high affective disposition. It can be deduced from the results that 400 level students are more disposed to affective dispositions in the areas of empathy, compassion and appreciation of cultural diversity than 100 level students.

Table 2  Results of One Way Analysis of Variance (ANOVA) of Significance in Empathy, Compassion and Appreciation of Cultural Diversity Mean Scores of University 100 and 400 Level Special Education Students

<table>
<thead>
<tr>
<th>Affective Disposition</th>
<th>Level</th>
<th>N</th>
<th>X</th>
<th>Sd</th>
<th>df</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empathy</td>
<td>100 Level</td>
<td>100</td>
<td>42.59</td>
<td>12.82</td>
<td>198</td>
<td>177.27</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>400 Level</td>
<td>100</td>
<td>67.55</td>
<td>13.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compassion</td>
<td>100 Level</td>
<td>100</td>
<td>27.41</td>
<td>3.14</td>
<td>198</td>
<td>495.00</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>400 Level</td>
<td>100</td>
<td>42.20</td>
<td>6.35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appreciation of Cultural Diversity</td>
<td>100 Level</td>
<td>100</td>
<td>27.63</td>
<td>6.48</td>
<td>198</td>
<td>258.23</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>400 Level</td>
<td>100</td>
<td>44.39</td>
<td>6.16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2 above shows the levels of affective dispositions in the areas of empathy, compassion and appreciation of cultural diversity using the One Way Analysis of Variance (ANOVA). At the degree of freedom 198 and level of significance at 0.05, the F values, 177.27 (empathy disposition), 495.00 (compassion disposition), and 258.23
The Impact of Special Education Curriculum on Affective Dispositions of Student-Teachers in the University of Jos, Northern Nigeria

(appreciation to cultural diversity disposition) were greater than the P-values. This means that Ho1 is rejected. It is therefore concluded that there is a significant difference in the affective dispositions of the students in the affective dispositions of the students in favour of the 400 level students.

**Table 3** Results of One Way Analysis of Variance (ANOVA) Gender Difference in Empathy, Compassion and Appreciation of Cultural Diversity Mean Scores of University Special Education Students

<table>
<thead>
<tr>
<th>Affective Disposition</th>
<th>Gender</th>
<th>N</th>
<th>X</th>
<th>Sd</th>
<th>df</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empathy</td>
<td>Female</td>
<td>100</td>
<td>57.12</td>
<td>23.02</td>
<td>198</td>
<td>5.84</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>100</td>
<td>49.13</td>
<td>23.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compassion</td>
<td>Female</td>
<td>100</td>
<td>37.29</td>
<td>10.68</td>
<td>198</td>
<td>7.67</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>100</td>
<td>33.33</td>
<td>9.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appreciation of Cultural Diversity</td>
<td>Female</td>
<td>100</td>
<td>35.01</td>
<td>12.52</td>
<td>198</td>
<td>1.57</td>
<td>0.210</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>100</td>
<td>37.03</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 indicated the gender affective dispositions of students’ teachers in the areas of empathy, compassion and appreciation of cultural diversity using the One Way Analysis of Variance (ANOVA). At the degree of freedom 198 and level of significance at 0.05, the calculated F values, 5.84 (empathy disposition), 7.69 (compassion disposition), and 1.57 (appreciation to cultural diversity disposition) were greater than the P-Values. This means that the general findings is that female student teachers exhibited higher empathy and compassion dispositions than the male counterparts, while the males demonstrated higher appreciation of cultural diversity than their female peers.

**4. Discussion**

The data for this study revealed significant impact of special education curriculum contents on affective dispositions of student-teachers in the areas of empathy, compassion, appreciation of cultural diversity and gender factor. Results shows that the final year student-teachers (400 level) who were exposed to the special education curriculum contents through classroom instruction exhibited higher empathy, compassion and appreciation of cultural diversity to students with special needs in the University than their counterparts (100 level) who just came into the system and are yet to acquire the contents of the curriculum. Hence, the percentage scores attested to this fact (see Table 1) for more details. This finding corroborate Banks (1977) who stated that affective dispositions has to do with the manner in which teachers and students deal with issues emotionally, such as attitude, empathy, compassion and appreciation of cultural diversity which may be acquired through special curriculum. This finding is possible due to the exposure of the final year students to the special education curriculum contents over the years and could have influenced their attitude.

The second finding shows a significant difference in gender empathy and compassion dispositions of females student-teachers based on the special education curriculum. Similarly, a significant difference was recorded in the gender appreciation of cultural diversity in favour of the male students. The responses were elicited through the one way analysis of variance computed (see Table 3).

The finding gain support of Dalyop (2012) who stated that the issue of gender difference in affective disposition is quite controversial. That, females are more empathetic than males. Though this cannot be the case all the time because males are also empathetic. It can be concluded that the level of gender affective disposition of final year students to students with special needs is high but higher among the females than their male counterparts.
5. Conclusion

Special education curriculum contents promote affective dispositions of student-teachers to persons with special needs. Though, comparison between male and female student-teachers who do not receive instructions in special education curriculum showed no difference in attitude dispositions, those who received instructions revealed that female students tend to demonstrate higher affective dispositions to students with special needs than their counterparts.

References
The Nursing Students’ Beliefs on the Recorded Role Play between a Nurse and a Patient as a Strategy to Enhance English Learning

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Abstract: In pedagogical literature there is significant support for the use of video recording in general education. Audio can be used in numerous academic contexts. Recording role play between a nurse and a patient is important for teachers to provide nursing students with a study aid they can review after lecture. In addition, the audio recording can enable both teachers and nursing students to review the students’ role play sessions both for classroom discussion and the assessment at home in preparation for feedback and discussion in class the next day.

The objective of this study is to explore the nursing students’ beliefs on the recorded role play between a nurse and a patient as a strategy to enhance English learning. This research was conducted mainly within a scientific framework. Questionnaires were employed mainly to collect data. The subjects participating in this study were 117 students of nursing study programs of St. Elizabeth College of Health Sciences in Semarang, Indonesia.

The initial assumption that students were reluctant to have their teaching practice recorded due to initial feelings of embarrassment at conducting role play seems to be completely wrong based on the results of this research. With the recorded role play, the majority of the respondents felt they would be motivated and gain confidence in learning English. They also believed that they could improve their fluency and develop their vocabulary. Surprisingly, they found their recorded teaching practice not as something embarrassing or frustrating but challenging and fun.

Key words: role play, belief, communication

1. Background

Effective communication plays an important role in the clinical area; therefore, the need for nurses to be effective communicators has been acknowledged within the literature (Babatsikou & Gerogianni, 2012). Effective communication enables nurses to form a good relationship with their patients. It is very important that the nursing students should have the ability to apply effective communication skills during their interaction with their patients. Therefore, it is essential that the nurses’ competency in communication skills be developed through practice in order to understand the patients’ problems. It is through the use of a role play situations between nurses and patients that the nursing students can improve their communication skills.

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In relation with the nursing students’ EFL class, at the end of the program the nursing students are required to perform a pair role play between a nurse and a patient for the final marking. Since last year all the role plays have been recorded. The main reasons are that basically students under study like their pictures taken and their actions recorded in particular contexts for their reference especially when they may have the copy of the recording for their own documentation as well. In the EFL context, the English language used in recorded role playing can be reviewed for both classroom discussion and more accurate assessment at home in preparation for feedback and discussion the next day. Another reason is that video-recording can be used as a tool for reflection; in this case, to help students become reflective practitioners especially to preserve their linguistic aspects such as grammar, pronunciation, word choice for analysis and correction. In this research, it is essential to see whether a recorded role play can be used as a tool to enhance learning.

1.1 Previous Study of Beliefs and Language Learning

Deeply held beliefs that most learners appear to have in second language learning have received much attention in recent years (Horwitz, 1999; Rula, 2006; Magogwe & Oliver, 2007).

Horwitz (1999) explores the study of beliefs in language learning and cultural context. She used the “Beliefs about Language Learning Inventory (BALLI)” to identify similarities and differences across cultural groups. The result of her research indicates instances of differing beliefs between and among the American, Korean, and Turkish heritage groups. However, an examination of the responses to individual BALLI items did not yield clear-cut cultural differences in beliefs. Several of the differences identified in the various American groups and the two groups of Korean and Turkish heritage learners are claimed to be more clearly attributable to differences in learning circumstances than culture. Finally she further concludes that at present, there is not any strong evidence for a conclusion of cultural differences in learner beliefs.

Unlike Horwitz (199), Magogwe & Oliver (2007) highlights the connection between beliefs and learning strategy. The results of their research show that Botswana students do use a number of language learning strategies, but that they show distinct preferences for particular types of strategies. The findings also reveal a dynamic relationship between use of language learning strategies and proficiency, level of schooling (representing age differences) and self-efficacy beliefs.

In her research, Rula (2006) illustrates the students’ beliefs in learning English and French in which the students viewed English as an easy language and French as a difficult one and, consistent with a popular belief held in Lebanon, agreed that it is “easier” to learn French before learning English.

From the three research studies above, the BALLI has proven very useful in the identification of learner beliefs about language learning as it is connected to other important factors such as learner strategies, differences in learning circumstances, and learning different target languages.

1.2 Problem Formulation

This research aims at investigating the respondents’ beliefs on the recorded role play as a strategy to enhance English learning.

1.3 Research Objective

The objective of this research explores the respondents’ beliefs on the recorded role play as a strategy for enhancing English learning
1.4 Significance

Through these research findings, the nursing students are expected to gain better understanding of the recorded role play as a strategy to enhance English. Such knowledge, I believe, would help in the design and implementation of the recorded role play used in numerous academic contexts for both students and their professional development.

2. Role Play in Language Teaching

Role play is a type of activity popular with foreign language teachers and learners, textbook authors and teacher trainers. Deeply held beliefs that role play has an important role in English language teaching received much attention for years (Dent-Young, 1977; Livingstone, 1983; Richards, 1985; Magos and Politi, 2008; Liu & Ding, 2009). Role play is one of the techniques particularly employed in the communicative approach to teaching a second language. The role-play technique involves the representation of a realistic situation, often within the frame of a given scenario. It is aimed at the learner’s understanding of the experience produced in a specific situation. In role play, students have to use the information given to them about their roles when interacting with others.

Livingstone (1983) further highlights the basic concept of role play. In the classroom context, students can simulate or role play but outside the classroom, in real contexts, we play any number of roles such as the role of a husband or a wife at home, father or mother, daugter or son and in a hospital, the role of a patient, the role of patient’s neighbors, etc. In each of the roles our different patterns of behavior are needed. The role of a father or a mother at home will be different from that of a nurse in the hospital. A certain range of behavior is possibly acceptable or appropriate for one role but not for another role. In linguistic aspects, as far as English is concerned, the role behavior in one’s mother tongue is possibly different from that in English. So, the linguistic aspect plays an important part in one’s role behavior.

According to Livingstone (1983), there are aspects of role behavior needed to consider as far as linguistics is concerned. Formality is one aspect. A nurse will greet a colleague with: Hi, Nancy, but s/he will address the patient with: “Good morning, Mrs. Jones”. The use of formal or informal greeting depends on the relationship with the person we are talking to. Another aspect is register, the example of which is occupational register. When two doctors are talking about their work, lay people will find it difficult understanding their conversation as they have no knowledge of medical terms. For example the word “stool” generally means “a seat that has three or four feet, but no back or arms while in medical term, it means “a piece of solid waste from your bowels”.

Apart from formality and register, function is another aspect a nurse should consider in communicating with others. In enquiring about health, s/he will ask “How are you today?” while when meeting a friend s/he may need the function of greeting: “Hi, Jane, nice to see you”, then, of inviting: “How about going downtown, tomorrow?”

It is also important for a nurse to understand the patient’s feelings (angry, happy, sad, depressed) so that s/he can adjust his/her own reaction accordingly.

3. Role-playing in the Education of Nursing Students

The need for nurses to be effective communicators has been acknowledged in such literature as Nursing — A Concept-Based Approach to Learning by North Carolina Concept Learning Editorial Board (2011); Babatsikou & Gerogianni, (2012); Ashmorea & Banks (2004). It is through effective communication that nurses can form a
The Nursing Students’ Beliefs on the Recorded Role Play between a Nurse and a Patient as a Strategy to Enhance English Learning

caring relationship with patients and convey to the patients that they can understand their problems. Babatsikou & Gerogianni (2012) further highlight the importance of effective communication in the clinical area, as it can contribute to the implementation of the expected therapeutic outcome. It is through the use of a role play situation between a nurse and a patient that the implementation of the expected therapeutic outcomes can be achieved. During a role play situation, nurses should be able to deal effectively with different types of patients and maintain the therapeutic environment as their patients are considered the center of their professional attention.

Martínez Riera et al. (2010) further mentions that among the several techniques psychodrama offers, role-playing is the one most frequently used in different areas including education as students go through an important experience through dramatization. They further mention that dramatization helps students overcome fears and uncertainties caused by certain nursing situations. They have a better professional know-how when they understand the situations, roles and questions asked or to be asked, the answers they should give, and how to actively listen (by paying attention to words, gestures, actions and situations). Therefore, it is essential to apply role playing in the English language teaching for nursing students.

4. The Use of Audio Visual Recording in Academic Contexts

In pedagogical literature there is significant support for the use of video recording in general education. Audio can be used in numerous academic contexts. Through video recordings, the nursing students who assess patients during role play exercises will be able to observe themselves during their classroom practices, obtain immediate feedback from their friends and teachers and find out the skills they need to improve. The nursing students in recorded role playing and their teacher can review the recording as many times as needed to carefully examine different aspects of their performance. The nursing students’ recorded role play sessions make it possible to hold a mirror up to teachers, to focus on the language used during the interaction between a nurse and a patient and to see it for feedback purposes. Therefore, video recording is a logical aid in making the linguistic aspects used during interaction the focus of attention.

In the EFL context, the English language used in recorded role playing can be reviewed for both classroom discussion and the assessment at home in preparation for feedback and discussion the next day. The aim of the video recording, to preserve learner’s performance for analysis and correction, is highlighted by Lonergan (1995). In the improvement of their English language, the recordings allow them to observe and assess their own nursing practices: their attitudes, their speech, use of grammar, the filler words they use, and the time management of their lessons.

In addition, González suggests the advantages of video-recording as a learning strategy for students, as a pedagogical tool for teachers and as a tool for pedagogical research. He further highlights that to see oneself on video sometimes can be the only way of becoming aware of inappropriate postures or involuntary movements, and this awareness is necessary to address them. Another reason is the potential of video-recording as a tool for reflection; in this case, to help students become reflective practitioners. Watching video-recordings with others also helps the students themselves become a learning community where teachers and students are involved in collective discussion and reflection.

Basically, students generally like being recorded in particular context to use on an ongoing basis as their reference, especially when they may have the copy of the recording as their own documentation for pride on the one hand. On the other hand, their recorded role playing can result in their unhappiness as they may feel nervous...
and being threatened during the recording process.

However, making students’ recorded role play sessions available before class meetings makes more time available for discussion. In the classroom context, multimedia can be a powerful tool for helping students learn and retain complex ideas and phenomena. In connection with this context, the writer will further study whether the recorded role play is considered a threat or a tool to enhance learning.

5. Method

5.1 Rationale

My research was conducted mainly within a scientific framework. Questionnaire was employed mainly to collect data for this study. At the level of theoretical perspective, my study follows the path of quantitative. Its goal is to explore the nursing students’ beliefs on the Recorded Role Play as a strategy to enhance English learning.

5.2 Subjects

The subjects participating in this study are 117 second semester nursing students of Nursing Study Program, St. Elizabeth College of Health Sciences, Semarang, Indonesia. They consist of 23 male and 94 female students.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>23</td>
<td>19.7</td>
<td>19.7</td>
<td>19.7</td>
</tr>
<tr>
<td>Female</td>
<td>94</td>
<td>80.3</td>
<td>80.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

5.3 Instruments

The data collection instrument used in this study is an Indonesian and English questionnaire. There are 15 questions, divided into two main sections as follow:

1. Background (5 questions)

   This section concentrates on the student’s identity, their background of previous learning experience, perception on their overall English proficiency, and reasons to learn English.

2. Respondents’ Beliefs on the recorded role play as a tool for enhancing English learning (10 questions).

5.4 Procedure

This research was conducted with the following procedures:

1. Formulating the questionnaires.

2. Validating the items of the questionnaires.

3. Analyzing the data.

4. The items which are not valid will be dropped and only the valid items will be further analyzed.

5.5 Data Analysis and Interpretation

All the data were processed using the SPSS-17. Descriptive statistics were obtained to identify the overall characteristics concerning respondents’ beliefs on the recorded role play between a nurse and a patient as a strategy for enhancing learning.

This section presents the results obtained from the statistical analyses. In this section, the percentages and frequencies of the students’ beliefs on the recorded role play as a tool to enhance English learning are illustrated.
The Nursing Students’ Beliefs on the Recorded Role Play between a Nurse and a Patient as a Strategy to Enhance English Learning

**Table 2** I Believe My Motivation to Learn English Can Increase through the “The Recorded Role-Play between A Patient and A Nurse”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Agree</td>
<td>45</td>
<td>38.5</td>
<td>38.5</td>
<td>44.4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>65</td>
<td>55.6</td>
<td>55.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

This question is designed to find out whether the students are motivated to learn English through recorded role play among many factors influencing the students’ desire to learn. In order to learn, there must be a will to learn on the part of the learner, in other words, there must be motivation. Establishing motivation is a preparatory phase for an act of learning. Recorded role play is designed to generate the students’ motivation to learn.

Responses to the item as shown in Table 2 reflected considerable optimism in the English learning process. For instance, the majority of the respondents seemed to feel motivated to learn English through the recorded role play as 45 respondents (38.5) agreed and 65 respondents (55.6%) strongly agreed with the statement. Only about 6% (7 respondents) of are neutral.

**Table 3** I Believe My Confidence to Speak English Can Increase through the “The Recorded Role-Play between A Patient and A Nurse”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>.9</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>7</td>
<td>6.0</td>
<td>6.0</td>
<td>6.8</td>
</tr>
<tr>
<td>Agree</td>
<td>48</td>
<td>41.0</td>
<td>41.0</td>
<td>47.9</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>61</td>
<td>52.1</td>
<td>52.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Achievement in English learning is related to self-confidence (Williams & Burden, 1997). Successful learners tend to be those who feel competent and capable of learning and such feelings can be fostered by the teachers through encouraging a positive self-image, self-esteem, self-confidence; a feeling of “I can” or “I am capable of doing this” (Williams & Burden, 1997). A pedagogical implication is that it is important for teachers to always motivate the students who lack self-confidence as language learners and who are worried about expressing themselves in the foreign languages.

Table 3 displays the percentages and frequencies of respondents’ beliefs in their confidence to speak English can increase through the recorded role play. As can be drawn from the data, a big number of the participants indicated their confidence to speak English through the recorded teaching practice. Drawn from the responses of “strongly agree” (52.1%) and “agree” (41%), it is almost certain that almost all of the respondents were doing their best to enhance their confidence through the recorded role play.

**Table 4** I Believe I Can Improve My Fluency in English through “The Recorded Role-Play between A Patient and A Nurse”

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>6</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Agree</td>
<td>47</td>
<td>40.2</td>
<td>40.2</td>
<td>45.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>64</td>
<td>54.7</td>
<td>54.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
A similar result is shown in response to the item in Table 4. For instance, the majority of the respondents (94.9%) seemed to feel improvement in their fluency through the recorded role play. None of the subjects stated their disagreement to the fact that their fluency is improved through the recorded role play.

This fact is assumed to be closely connected with time provided by the teacher for students to consult their dialogues before the role play. In addition, the students are encouraged to consult the pronunciation with the dictionary program in their laptop. It is through this way that the students will gain confidence for the improvement of their fluency.

Table 5  I Believe I Can Develop My English Vocabulary through “The Recorded Role-Play between A Patient and A Nurse”

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>1</td>
<td>.9</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>12</td>
<td>10.3</td>
<td>10.3</td>
<td>11.1</td>
</tr>
<tr>
<td>Agree</td>
<td>47</td>
<td>40.2</td>
<td>40.2</td>
<td>51.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>57</td>
<td>48.7</td>
<td>48.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Giving the nursing students the opportunity to create their own dialogues for the role play provides them with an opportunity to be creative and the freedom to create their own expressions. In this way, students can generate ideas and vocabulary. It is through such an activity that makes the students aware of the need to acquire the English vocabulary related to the role play. The task given to the students asking them to write a dialogue for the role play gives them context and motivates them to find the words and develop their writing skills.

As shown in Table 5, responses to respondents’ vocabulary development through recorded role play displayed a high expectation of success in students (88.9%). Only less than 1% of the respondents indicated their disagreement to the belief of being successful in developing their vocabulary through recorded role plays.

Table 6  I Believe I Prepare the Role Play between A Patient and A Nurse More Seriously Because It Is Recorded

<table>
<thead>
<tr>
<th>Valid</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
<td>.9</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>1.7</td>
<td>1.7</td>
<td>2.6</td>
</tr>
<tr>
<td>Neutral</td>
<td>18</td>
<td>15.4</td>
<td>15.4</td>
<td>17.9</td>
</tr>
<tr>
<td>Agree</td>
<td>44</td>
<td>37.6</td>
<td>37.6</td>
<td>55.6</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>52</td>
<td>44.4</td>
<td>44.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

As for their progress in learning English, the majority of students valued their recorded role play related to their progress. For instance, almost all of the respondents (82%) appeared to be fond of having their role plays recorded. As a result, the students tend to prepare and perform well in the role-play because of their performances being recorded. There is a strong connection between having a positive self-image and performing well on learning tasks.

It is essential for the teacher to help students create a positive self-image when they feel poor motivation, incompetence, fear of failure, and adequacy, as these will lead to under achievement, and apparent lack of ability (Williams & Burden, 1997).
The Nursing Students’ Beliefs on the Recorded Role Play between a Nurse and a Patient as a Strategy to Enhance English Learning

Table 7  I Believe that “The Recorded Role-Play between A Patient and A Nurse” Is A Challenging Activity

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>4</td>
<td>3.4</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Neutral</td>
<td>11</td>
<td>9.4</td>
<td>9.4</td>
<td>12.8</td>
</tr>
<tr>
<td>Agree</td>
<td>51</td>
<td>43.6</td>
<td>43.6</td>
<td>56.4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>51</td>
<td>43.6</td>
<td>43.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

This question is meant to see whether the task of role play is challenging. According to Williams and Burden (1997), challenging classroom tasks will encourage curiosity in order to help learners realize their full potential. The classroom task must strengthen the connection between what they learn in school and what they perceive outside it. In preparing the role play, the students then work in teams of co-learners, further increasing their interest in the process and giving them valuable experience in team dynamics and collaborative work (Johnson et al, 2009). Similarly, Williams and Burden (1997) highlights significant learning which will take place when the subject matter is perceived to be of personal relevance to the learner and when it involves the learner’s active participation.

Students’ responses to the item in Table 7 showed clearly that the majority of the respondents (87.2%) perceived the recorded teaching practice as something challenging in learning English. Only 5.3% of the respondents indicated their disagreement to the belief of the recorded role play as something challenging in learning English.

Table 8  I Believe that “The Recorded Role-Play between A Patient and A Nurse” Can Be Fun

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1</td>
<td>.9</td>
<td>.9</td>
<td>.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>12</td>
<td>10.3</td>
<td>10.3</td>
<td>11.1</td>
</tr>
<tr>
<td>Agree</td>
<td>61</td>
<td>52.1</td>
<td>52.1</td>
<td>63.2</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>43</td>
<td>36.8</td>
<td>36.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Brown and McIntyre (1992) cited in Williams and Burden (1997) reported the result of their research on what made a good teacher. There are ten categories, two of which are making a relaxed and enjoyable atmosphere in the classroom and presenting in an interesting and motivating way. This implies that what motivate students to learn is learning things that they think are interesting. Our challenge as educators is to make learning fun.

As shown in Table 8, the majority of the respondents (88.9%) seemed to feel that it was fun to learn English through the recorded role play. Only one respondent (0.9%) indicated their disagreement of the belief that recorded role play was fun in learning English.

Table 9  I Believe that the Teaching Material in “The Recorded Role-Play between A Patient and A Nurse” Is Useful for My Career

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td>18</td>
<td>15.4</td>
<td>15.4</td>
<td>15.4</td>
</tr>
<tr>
<td>Agree</td>
<td>41</td>
<td>35.0</td>
<td>35.0</td>
<td>50.4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>58</td>
<td>49.6</td>
<td>49.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Students like to know that what they are learning can be useful in their lives but it is also important for a teacher to remember that relating content to student’s life is a good way to increase their attention and comprehension of the material being taught.

A cursory glance at the figure in Table 9 reveals that the majority of the students under study (84.6%) believe that recorded role play between a nurse and a patient is useful for their future career. The most frequently chosen (49.6%) was “Strongly Agree” and then “Agree” was 35% while the responses for “Neutral” side of the scale account for 15.4%.

Table 10  I Believe that through “The Recorded Role-Play between A Patient and A Nurse”, the Lecturer Can Evaluate the Student’s Performance More Accurately as the Recording Can be Reviewed at Home

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>5</td>
<td>4.3</td>
<td>4.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Agree</td>
<td>48</td>
<td>41.0</td>
<td>41.0</td>
<td>45.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>64</td>
<td>54.7</td>
<td>54.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The response to this item shows that almost all of the participants (95.7%) believe that the recorded role play can be used accurately to evaluate the students’ performance.

Recording is a valuable instrument to evaluate the students’ performance as it can be stopped, wound forward, rewound at home, as the teacher wishes for accurate evaluation.

In addition, the teacher can also study and discuss examples of the students’ verbal and nonverbal communication problems in the recorded role-play with the students the next day. During the discussion, the teacher can adjust and adapt the recording to match the learners’ reactions.

Table 11  I Feel Anxious When I Know that the Role Play between A Patient and A Nurse Will be Recorded

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>6</td>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
<tr>
<td>Agree</td>
<td>46</td>
<td>39.3</td>
<td>39.3</td>
<td>44.4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>65</td>
<td>55.6</td>
<td>55.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>117</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

The item above was intended to see the extent to which the students feel anxious when they know that the role play was recorded. As observed in Table 11, the students’ responses to this statement could be taken as a strong support of the idea that they feel anxious when they know that the role play was recorded as the majority of the students agreed (39.3%) and strongly agreed (55.6%).

This fact is closely connected with psychological problems highlighted by Lonergan (1984) in that many language learners experience camera shyness and fear caused by the equipment. In addition, teachers’ lack of confidence can lead to the learner’s lack of conviction about the value of the recording. He further mentions that such problems are most easily overcome if the first experiences with recordings are successful.

6. Conclusion

The initial assumption that students were reluctant to have their teaching practice recorded due to initial feelings of embarrassment at appearing on classroom television seems to be completely wrong based on the
The Nursing Students’ Beliefs on the Recorded Role Play between a Nurse and a Patient as a Strategy to Enhance English Learning

results of this research. With the recorded teaching practice, the majority of the respondents felt they would be motivated and gain confidence in learning English. They also believed that they could improve their fluency and develop their vocabulary. Surprisingly, they found their recorded teaching practice not as something embarrassing or frustrating, but challenging and fun.

References
Ethnic Minority Pupils in Indonesian Schools: Some Trends in Over-Representation of Minority Pupils in Special Educational Programmes at the Vocational

Soetyono Iskandar
(Makassar State University, Indonesia)

Abstract: The way categories, labels, and taxonomies are used depends upon national ideologies and nationally specific conceptions of citizenship and normality. Ethnicity, differences, disability and deviance are social constructions. Underachievement or overachievement in social (cognitive) performance or overrepresentation in special educational placements of certain groups of students is as much the product of categorization or definitional processes as it is the workings of institutional procedures, patterns, and intransigence. In particular (Vocational), schools’ inability to accommodate difference and diversity causes exclusion and alienation. Globalization and hegemonic neo-liberal ideology make it difficult to create a genuinely inclusive society, to produce complete citizens, and to promote equity. This study analyses the placement of ethnic minority students in special education programmes. It begins with a review of empirical reports that problematise the phenomenon of overrepresentation of students with immigrant background in special schools for intellectually disabled students. The analysis that follows is conducted through the prism of a number of perspectives, including sociocultural/historical theory, the inclusive education movement, multicultural education, and critical pedagogical theories. While there is no evidence to suggest that such overrepresentation is nationwide, the phenomenon can be identified in large cities where there are concentrations of immigrants. Analysis demonstrates that the problem is related to, among other factors, unreliable assessment procedures and criteria for referral and placement; lack of culturally sensitive diagnostic tools; the static nature of tests, including embedded cultural bias; sociocultural problems, family factors, and language problems; lack of parental participation in decision-making; power differentials between parents and school authorities; institutional intransigence and prejudices; and large resource inequalities that run along lines of race and class.

Key words: ethnicity, differences, disability and deviance are social constructions

1. Introduction

1.1 Construction and Deconstruction of Ethnicity

Social science research of the last two decades strongly points to a more social construction view of difference and diversity (Gergen, 2001; Hacking, 1999). This view of diversity, disability, and difference is not
just a humanistic approach, but is, rather, grounded on valid research and evidence that lends support to the conclusion that conceptions of differences are deeply entrenched in language use, discourse, history, context, culture, and ideological forces and power relations (Gergen, 2001; Thomas & Loxley, 2001). With regard to this, one good example is the way Great Britain and France define/understand ethnicity and how that conception is related to official taxonomies, educational policy, and practices. These are, in particular, linked with nationally specific conceptions of citizenship. Based on ethnographic research and a closer examination of the relevant research carried out on the two aforementioned countries, Raveaud (2003) revealed that the treatment of immigrants and their descendants is related to national ideology. The UK through its Multicultural Model uses typologies and classifications related to ethnic minority, colour, and race, whereas France avoids these terms and prefer to use the term immigrants or nationality as a marker (Raveaud, 2003; also van Zanten, 1997). The French Republican Model refuses to recognise the existence of majorities and minorities (van Zanten, 1997). Whether or not the French indifference to difference/diversity or the British emphasis on multiculturalism, diversity, and difference is the appropriate measure remains to be seen and is hotly debateable on both sides of the Channel. As two big European nations with a long history of colonialism and immigration, it is imperative that we use their experiences as a point of departure for our analysis of the Swedish experience here. Sweden appears to find itself somewhere in between these two countries’ ideological spectrums. It explicitly adopts multiculturalism and cultural diversity in an atmosphere of mutual tolerance; however, terms such as ethnicity, colour, and race are obscure both in official taxonomies, educational policies, and practices in schools. In fact, it is during these 10 years that the terms, in particular the term ethnicity, began to be widely used in academia as well as in the media. The most common typologies/categories used to refer to minority ethnic groups are immigrants, students with immigrant background (elever), and foreigners.

While the concept of ethnicity is not new, its widespread use in Swedish social and educational policy discourse is a very recent phenomenon. In that sense there is some similarity with the French model. Accordingly, the research landscape, taxonomies, discourses at different levels, and political intentions are shifting rapidly with regard to policies aimed at the integration and inclusion of immigrant students in the mainstream educational process. A good example in this domain is the reasons given for the underachievement or over-representation of ethnic minority students in special educational places. In a recent report issued by the Swedish school authority (Skolverket, 2004), it is indicated that most of the academic difficulties ascribed to immigrants can be attributed to socioeconomic factors. When such factors are being controlled for, most of the group differences are eliminated.

It is interesting to note the similarities of findings that came out of the educational authorities in France (Ministry of Education statistics department, 1995 in Vallet and Caille, 1995) and the diametrically opposite conclusions drawn from the British studies (see, e.g., Gillborn & Youdell 2000; Gillborn & Mirza, 2000; Gillborn & Gipps, 1996; OFSTED, 1999) about the causal factors attributed to underachievement of ethnic minority students, which emphasized the significant role ethnic belonging plays and that social class accounts for only part of educational inequality. The above three studies were conducted by researchers financed by their respective ministries/authorities of education. It is safe to conclude that Sweden appears to be entangled along this continuum between constructing ethnic differences and deconstructing ethnic differences to an extent considering it to be a social artifact as in the case of French Republican traditions. In this paper by leaning on the use of such terms as ethnicity, difference, and diversity, I am embarking on a social construction philosophical flight. The above introduction is simply to illustrate how national ideologies and research directions influence each other and
that both are social constructions that, in turn, shape the conceptualization of difference.

In this paper, ethnic minority pupils and pupils with immigrant background are used interchangeably. Actually, most of the studies analyzed here, when referring to overrepresentation of ethnic minority pupils in special educational placements, usually meant those immigrants who had migrated to Sweden within the past 20 years. In many cases, these pupils were born outside Sweden and can be termed as new arrivals. (It is notable that Sweden has five National Minorities: Jews, Roma, Sami (also an indigenous people), Swedish Finns and Tornedalers. The historical minority languages are: Yiddish, Romany Chib (all varieties), Sami (all varieties), Finnish, and Meänkiel (Tornedal Finnish).

1.2 Current Swedish Educational Policies and Their Contradictory Messages

The decrees, statutes, and policies that have evolved in the early 90s in Sweden are characterized by contradictory messages related to conception of knowledge, social justice and equity and equality issues. This has also had an effect on student achievement profiles and marginalized a large segment of the student population from ordinary educational settings. This is not an accidental phenomenon. It is part and parcel of global phenomena in our late modernity (Bauman, 1992), high modernity (Giddens, 1990) and/or late capitalism that is deeply entrenched with values of effectiveness, competition, standardization, freedom of choice, and increasingly individualist and elitist culture. The notion of special needs is intimately linked to the rise of the worldwide inclusive education movement, in Sweden named A school for all in the 1980s. Paradoxically, in the footsteps of the introduction of inclusive education, the number of pupils labelled as having special needs increased dramatically (Persson, 1998; Rosenqvist, 2007; Skolverket, 2002). Teachers found themselves incapable of dealing with pupil diversity in the classroom and to meet everyone’s individual needs. This has often been regarded as schools’ failure to meet the diverse needs of pupils, manifesting itself in resignation and distress among teachers and pupils not achieving set targets. However, it might be questioned whether the inclusive school is anything more than a structural or organizational phenomenon resting upon political rhetoric with little or no anchorage in public policy (Barton, 1997; Emanuelsson, Haug, & Persson, 2005; Nilholm & Björck-Åkesson, 2007).

This fragmentation of educational policymaking has excluded in particular the already vulnerable groups such as the disabled, ethnic minority students, and the socially disadvantaged segments of the population. Bauman (1992, 1998, 2001) argues eloquently that globalization has produced a shift from social rights to competition, productivity, standardization, and efficiency, and a shift from public to private and from social responsibility to individual (or family) responsibility. As a process, globalization is not linear, but contradictory and contested. Its impacts are unequal and differ on the basis of regions, classes, and people. The neo-liberal economy is dominating the world especially after the end of the cold war, and its particular form of capitalism is characterized by deregulating markets, reducing or changing the role of the state and most importantly, reducing social expenditure, including expenditure on education. This phenomenon has also been witnessed in the past 15 years even in Sweden in tandem with rising unemployment, issues of security, alienation, marginalization and exclusion, creating a discourse of resentment along the lines of them versus us. I presume, on the basis of a large number of indicators, that over the next decade Swedish society will become increasingly multiethnic and multilingual and the number of disadvantaged children will substantially increase. An estimated 20% of the Swedish population has an immigrant background. It is expected that the demographic landscape in the year 2020 is that 30% of all working age individuals in Sweden will have had their roots outside of Sweden (Leijon & Omanovic, 2001; Statistics Sweden, 2004).
Many, many students are at greater risk of needing special education services when they are poor or of a minority race or language. The need for addressing and reviewing scientific and methodological problems explaining overrepresentation and educational outcome differences related to race, ethnicity, socioeconomic status becomes imperative. (The rule of thumb is that a group is considered overrepresented if their enrolment in special education is equal to or greater than 10% of their proportion in general education; CEEP, 2004, Nov.).

Problems that need to be addressed will include (1) defining terms with precision and accuracy, (2) examining epistemological considerations such as ethnic/race categorisation and explaining group differences, and (3) developing unbiased research methodology and procedures for sampling, instrumentation, and measurement (see Obiakor, 1994; Obiakor & Utley, 1997).

1.3 Theoretical Perspectives and Research Genres

This analysis is anchored within a two-pronged theoretical perspective. The first is the perspective of inclusive education within discourses on special educational research and provisions (Clark, Dyson, & Millward, 1995; Thomas & Loxley, 2001) and the second is a sociocultural perspective within Vygotskian as well as neo-Vygotskian tradition. In the first vein, the last two decades of research shows not only the lack of well founded and sound theories in special education (see, e.g., Clark et al., 1995; Emanuelsson, 1998, 2000a, 2000b; Persson, 1998; Skrtic, 1991; 1995) but also the crisis in special education knowledge. In particular, the overrepresentation of minority pupils in special educational programmes has been a cause for concern and debateable issue. It has been noted in a number of countries that ethnic minority groups are disproportionately represented in special classes and schools. (See Berhanu, 2001; Brady, Manni & Winnikur, 1983; Coard, 1971; Gillborn, 1990; Losen & Orfield, 2002; Dyson & Gallannaugh, 2008). Also some Swedish reports, e.g., Bel Habib, 2001; Bloom, 1999; Hahne Lundström, 2001; Lahdenperä, 1977; Skolverket, 1998, 2003; 2005a; SOU, 1977, and a number of student theses). (Although, in the case of Sweden, a very recent study conducted by Jerry Rosenqvist and associates (2007), commissioned by The Swedish Institute for Special Needs Education, has not supported the hypothesis that there is overrepresentation at a national level).

Although these studies show that marginalized, subaltern, and ethnic minority groups are overrepresented in those special services all out of proportion to their number, they do not tell us much about the possible causal factors that can be accountable for their lag in the regular school system. One purpose of this article is, therefore, to elucidate the process of special educational placement and to highlight the major causal factors that may be responsible for the observed overrepresentation based on some experiences from Sweden. For the purpose of this study, the term special educational placement or programme refers to schools and classrooms for students with severe learning disabilities (särskolan). The paper also discusses the paradox and dilemmas that characterize the changing identities of special education in the light of the current catchy phrase inclusive education.

Most of the above studies and a large number of other similar studies indicated the significance of inclusive education, cultural diversity and intercultural education as central themes in the educational arena. As cultural pluralism becomes increasingly a social reality, education authorities are grappling with the new phenomena to reconcile the conventional monolithic educational approach with the emerging pluralistic trends—cultural, racial and ethnic diversity—that require accommodation to the cultural norms of pluralism. The conflicts between the culture of the school and the culture of the home, minority-majority relationships, values, identity matters, and language and cognitive styles and strategies have become a new focus of attention (Berhanu, 2001; 2005a; 2005b; 2006). Artiles (2003) recently noted that minority overrepresentation and inclusion pose important challenges to
special educators understandings of culture, the role of culture in visions of disability, and the creation of a research ethos that is mindful of cultural differences (p. 165).

The second perspective applied in this study is a combination of the sociocultural-historical theory of cognitive development (Vygotsky, 1934; 1978; Valsiner & Van den Veer, 2000) and the social theory of learning model (Wenger, 1998). Both perspectives take social interactions into account and focus on the structure of activities as historically constituted; and meaning, practice, community, and identity are treated as major components necessary to characterize social participation as a process of learning and knowing. The particular relationship between culture/ethnicity, special education, exclusion/control, feeling of rootlessness, and family disintegration is complex and deserves close scrutiny and thoughtful analysis. The issue of over identification of minority students for special education is not a new concern and has been discussed in special education literature for some time. However, it is important to remember in the context of what we are discussing here that many of the problems with special education are outgrowths of larger problems with education generally and must be treated as such. It is no coincidence that many of the communities struggling with special education challenges are the same communities plagued by general education deficiencies.

Disproportionality in special education placements occurs through a process of social construction by which decisions about disability and its appropriate treatments are negotiated according to official and unofficial beliefs and practices. To discover what lies behind disproportionality, research must use methods that can document the social processes that lead to it. Statistical analysis can be used to provide a powerful teasing out of the variables that are associated with disproportionality (Losen & Orfield, 2002). Oswald, Coutinho, and Best (2000) proposed two general hypothesis on the phenomenon of disproportionality; the first one being tied to real differences in socioeconomic outcomes between social groups. That some groups (or minority students) are deeply disadvantaged (in social and economic experiences), marginalized, susceptible to diseases, and disabilities; and the second hypothesis is that a significant portion of the over-representation problem may be a function of inappropriate interpretation of ethnic and cultural differences as disabilities (p. 2). As we see later in the paper there is sound evidence to support the hypothesis (See also Dyson & Gallannaugh, 2008 for similar observation in England).

2. The Phenomenon of Over-Representation of Minority Pupils in Special Educational Placements

One in five compulsory school pupils in Sweden are judged to be in need of special needs education according to Persson (2002). At the same time, the number of pupils enrolled in special schools for the intellectually disabled (särskolan) has increased from .9% up to 1.4% during the last 5 to 6 years (Skolverket, 2002). From 1992 to 2001 the number of students registered in schools and classrooms for students with severe learning disabilities . . . has increased by 67% (Rosenqvist, 2007, p. 67). This means that around 200,000 pupils in Sweden receive some kind of special educational support during the school year. Besides, as mentioned earlier, the Swedish society has become and will become increasingly multiethnic and multilingual. Reports indicate that the number of children and youth living in poverty has substantially increased over the last few years, and there is a significant increase in the number of homes where children speak a primary language other than Swedish. Students are at greater risk of needing special needs education services if they are poor and/or belong to a minority group.
Segregation at the metropolitan level creates an effective barrier between people. Suspiciousness, a mutual sense of outsidership, and the construction of We/Them boundaries can be nourished by the separation of social spaces. For many native-born citizens, places like Alby, Bergsjön, Fittja, Rågsved, Ronna, and Tensta surely sound as far away as Istanbul, Addis Ababa, Santiago, and Tehran. They are places one has never visited but whose names make their way through the media buzz, often associated with negative news…(T)he segregated city ought to be regarded as much the cause of social processes as the result of residential and moving decisions made by different groups (Andersson, 1997, p. 20). There are currently 6,579 people dwelling in Hammarkullen (a suburb of Göteborg). Seventy percent are of foreign background. Unemployment in the area is estimated at 90 percent (Holm, 1997). At the same time, unemployment among Somalis in Hammarkullen was put at 99 percent (cited in Allan Pred, 2000).

Although the situation of immigrant children and youth in Sweden is not as extreme and dramatic as experienced by ethnic minority students as in, for instance, Israel and USA, some parallel patterns and aspects of the phenomena can be discerned even in Sweden (Berhanu, 2001). Some recent studies conducted in Sweden indicate over-representation of immigrant students out of all proportion to their numbers in special schools and classes (see, for instance, Bel Habib, 2001; Hahne Lundström, 2001; Lahdenperä, 1997; SOU, 1997, 2003). However, extensive and longitudinal studies have yet to be carried out in this specific problem area (see Rosenqvist, 2007) and there is a need for a coherent cumulative body of disproportionality research.

A few decades ago, special education was focused on addressing the special needs of physically, mentally, and socioemotionally affected segments of the student population. Currently, the needs to be addressed by special education have widened. And in fact as some sporadic Swedish statistics showed, two decades ago minority and immigrant students were slightly over-represented in special education programmes. The over-representation has not only persisted but has also dramatically increased (see the references in the paragraph above).

The over-representation is not a new phenomena. What is new is that new forms of exclusionary measures are taking place while the force of rhetoric toward inclusive measures is gaining substantial momentum in the pedagogical discourse. This Swedish experience is exactly similar to the practices in England as captured in the words of Florian and Rouse (2001): whilst the government calls for more inclusion and a greater recognition of diversity, it continues to promote social and educational policies that are not supportive of the development of inclusive schools. Indeed, many of the existing market place reforms ignore diversity and stress priorities that make it hard for schools to accept children who will not help them to meet their academic targets (p. 400). Although extensive studies have yet to be carried out, the already existing but sporadic studies (see, e.g., Bloom, 1999; Ilic-Stanisic, 2006; Källstigen, Riviera, & Özmer, 1997; Källstigen, Ohlin, & Setkie, 2002; Nilsen & Ström, 2003; Skolverket, 2005a; 2005b; SOU, 2003; Tideman, 2000) indicate that immigrant students are over-represented in special educational settings out of all proportion to their number. That observation is documented in big cities with large immigrant enclaves. My analysis of the phenomenon of over-representation is based on these limited materials.

3. General Factors: Sociocultural Problems, Budget Slash and Institutional Intransigence

In a recent report of the Swedish National Agency for Education (SOU, 2003; Skolverket, 2003) the over-representation of minority pupils in special schools has been outlined, and the indications are that the situation is alarming and there is cause for concern. The report based its analysis of the situation on two studies
conducted in two big Swedish cities, Malmö and Göteborg. The report points out, among other things, that wrong/inappropriate assessments, classifications, and procedures infiltrate placement decisions (also Dagens Nyheter, 2007). This is in part due to the educational staff’s lack of knowledge of the students’ home, sociocultural, and language backgrounds. As the report pointed out, the most probable reason for their misplacements, misdiagnosis, may be linked to the difficult and traumatic experiences endured by the children and their families before arriving in Sweden. And, these experiences coupled with the new acculturation process might have curbed their normal school adjustment. Both the official report and a number of other studies including student theses (e.g., Bloom, 1999; Hahne Lundström, Nilsen & Ström, 2001; 2003; Ilic-Stanisic, 2006; Källstigen et al., 2002; Skolverket, 2005a; Tideman, 2000) have pointed out that budget cuts or reduction could be one major factor that contributes to a general increase of students placed in special schools. This rise in special school placements has equally affected native Swedish students or ethnic Swedes. Tideman (2000) reminds us that these consistent budget cuts that have beset Sweden for the past 15 years have lessened/reduced tolerance for differences/diversity.

All the materials analyzed here indicated that the groups whose representation has increased by over 80% in compulsory special schools are borderline cases, children with concentration difficulties, children with immigrant background, older students, and students with autism and autism related situations. The major reason ascribed to this increase is budget reduction. The cuts have brought about a rise in class size in ordinary schools, which in turn caused a decreased student-teacher ratio and a reduction in the numbers of special educators and special educational services at primary school level. This development takes place in parallel with the school authorities/politicians’ demand to achieve the target goal designed for older students in higher grades, junior high school (6-9). The demand to fulfill the set goals, the quest for excellence, good test scores and examination results and a strong tendency for national systems of assessment and testing appear to have contributed to exclusionary pressures, ignoring issues of disadvantage, diversity, and equity.

According to the above cited studies, the decentralization process that took place in the 1990s giving local governments (municipalities) jurisdiction or full responsibilities to run schools is also said to have had an impact on the emergence of this dramatic over-representation. Accordingly, the phenomenon of over-representation also varies between municipalities. The local school authorities or schools have considerably varied evaluation parameters or procedures. Different districts have different interpretations of who is to be placed or entitled to be placed in special schools. There is generally locally designed evaluation practices of categorizing and labelling, the material basis of which is extremely questionable.

On the other hand, there are some who argue that the rise in the number of special school placements is a sign that placements in special classes/schools are dedramatized; that regular schools and special schools have come under a single school management (e.g., Nilsen & Ström, 2003; Ilic-Stanisic, 2006; Bloom, 1999; Skolverket, 2005). Therefore, the rise is more a consequence of the closer working relationship between these entities than disengagement between them.

According to Bel Habib (2001), the discourse in Sweden about ethnic minority pupils swing between a collectivized and culturalised discourse as, on the one hand, expressed in the form of special needs children and, on the other, as in the form of pathological category, expressed as individual diagnosis tied to developmental delays. The author argues further that the school imposes its discipline-based exclusionary procedures and power techniques through turning structural/institutional-based teaching problems into cultural difference or individual focused handicap. This problem-shifting strategy (i.e., attaching the problem with the individual child or its
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Culture or labelling procedures) has helped the school to avoid a critical evaluation of its own institutional practices and a change in its pedagogical and classroom management approach (Berhanu, 2005a). Lahdenperä’s (1997) study with ten Swedish teachers who work with immigrant /minority students strongly indicate that most of the teachers associate these students’ educational difficulties with the individual students, and accordingly, the teachers’ reaction to the problem is fundamentally based on how to correct the child or how to arrange compensatory mechanisms. Generally, my impressions that the studies conducted in Sweden are obviously not specific enough to explore questions of intent or that there is a purposeful discriminatory practice by which we mean blatantly discriminatory practices in policy or practice.

4. Family Factors, Parents’ Educational Level and Power Distance

My review of the literature shows a great deal of similarities between the experiences of other Western countries and Sweden with regard to the phenomenon of over-representation (Berhanu, 2001). The imbalance in power relationships between parents of students in special education arrangements and the school authorities is well documented (Gillbourn, 1990; Gillbourn & Mirza, 2000; Losen & Orfield, 2002). A similar study (Bel Habib, 2001) conducted in one city in Sweden in which there is a high concentration of immigrant families has documented the huge gap in power relationships between school authorities and these families. The families have enormous respect for school authorities and they do not argue with or confront school leaders. Many of these parents have a low level of formal education and have limited experiences as to how to deal with the authorities and usually genuinely trust the procedures that lead to placement decisions. The school tells them what is good for their children and parents accept the recommendations without questioning. The parents interviewed were not informed about the consequences of special educational placements and what these entailed for the future. It is not difficult to understand the reaction of parents and their feelings of powerlessness when the special educational evaluations are presented to them as a set of discreet decisions based on scientific analysis and assessment (Armstrong, 1995; Losen & Orfield, 2002; Galloway, Armstrong, & Tomlinson, 1994).

5. Evaluation and Diagnostics Procedures

Surprisingly, the pattern observed elsewhere with regard to evaluation and diagnostic procedures bias is becoming increasingly visible in the Swedish context. Although the study I refer to here is based on one specific city, I fear that there is a tendency even in other parts of Sweden. The very latest study (Rosenqvist, 2007) has, as its primary finding, documented this deficiency in evaluation and diagnostic procedures (also Dagens Nyheter, 2007). According to Bel Habib (2001), who used quantitative methods to map out the magnitude of the problem of over-representation, the majority of the Swedish students (native/white Swedes) in special schools have clear, visible, medically proven or concretized functional handicaps, whereas minority students who are assigned to these special schools, as the researcher distinguished from diagnosis and referral files, were categorized in diffused, vague, symptom-based and pedagogical-related terms such as concentration and behavioural problems, speech and language difficulties, unspecified poor talent or developmental retardation.

As is the case elsewhere (see, e.g., Losen & Orfield, 2002; Dyson & Gallannaugh, 2008; Harry & Klinger, 2006) the special educational placement pattern for ethnic minority pupils is that these students are fairly represented (or in other words their representation is comparable to their number in the general society) in low incidence disabilities (e.g., visual, hearing, multiple and physical disabilities) and they are overrepresented in high
incidence disabilities (e.g., emotional/behavioural disorder and learning disabilities). That means the observed overrepresentation is in subjective cognitive disability categories rather than in hard/visible disability categories (see Losen & Orfield, 2002). Not surprisingly, in light of current experience in the United States, children from different social and ethnic groups found themselves disproportionately placed in these categories..... (Dyson & Gallannaugh, 2008, pp. 36–37). Dyson & Gallannaugh (2008) uses the term nonnormative categories instead of subjective cognitive disability though. Certainly, there is some evidence from Sweden to support this instance.

This observation testifies to the fact, as Foucault (1979; 1984) consistently argued elsewhere in his extensive writings, that institutions, in this case the schools, function to maintain and even advance the practice of normality and deviance through instruments of power and knowledge relations that not only exclude a segment of the student population but also serve as instruments to construct identities and labels such as students with special educational needs (also Allan, 1995).

A similar study conducted by Kari Hahne Lundström (2001, in SOU, 2003) on the over-representation of immigrant students in upper secondary special schools has come to a similar conclusion, namely that many of those students enrolled in the upper secondary school for students with intellectual disabilities do not have a diagnosed intellectual disability. In addition, immigrant students are diagnosed far less often than are their Swedish peers. In most cases, they have undergone one single test, which in turn determines or is used as argument for their school placement.

The tests are of an ability testing type, are standardized, and are usually administered on a one time basis. This is a phenomenon that most minority students go through in many western countries (see, e.g., Berhanu, 2005a; 2005b; Brady et al., 1983; Gupta & Coxhead, 1988; Hegarty, 1988). The tests are not culture free (Berhanu, 2007) and the evaluation does not sufficiently take into consideration the overall situation of the child. The test result tells very little about whether or not the child’s inability to give correct answers has to do with his/her language skills or whether there is a sociocultural element in the way they understand and answer the question. It is a well known fact that these so called standardised testing programmes consistently discriminate against disadvantaged and vulnerable groups (see also Hillard, 1990).

The above study (Kari Hahne Lundström, 2001 in SOU, 2003), which focuses on the Göteborg area, shows that the proportion of students with ethnic backgrounds other than Swedish is 45%, which is double that of their representation at national programmes in regular upper secondary school.

The reports analysed here, including a number of bachelor level student theses, clearly indicate that the evaluation reports upon which decisions were made to send students to special schools made do not provide a full picture of the problem that besets the individual student (e.g., Bel Habib, 2001). The students who are disproportionately represented never received a proper education support at primary schools and had limited participation in their overall educational process. The situation they were in, such as being in asylum shelters (immigrant reception centres) for many years, and the socialization/acculturation process during their temporary stay in the camps and life afterward may have been serious enough to have had severe repercussion on the children’s’ school adjustment. Lack of awareness of the complexities of these problems and their eventual outcomes plus a shortage of resources at primary school levels have aggravated the situation of these students. Their over-representation even in secondary special schools for young adults is therefore connected to this pitfall at the start of these students’ schooling rather than the students’ lack of cognitive ability or deficiency in their behavioural repertoire in any sense. As Gillborn and Youdell (2000, p. 4) rightly pointed out, inequality is constructed:
We take the position that groups defined socially by class, gender, race, ethnicity and sexuality are inherently no less capable of educational participation and success. These groups are defined by social convention, not by inherent, fixed or natural differences…. The processes by which these constructed differences come to be related to inequalities in experience and outcome are complex, varied and stable. (quoted in Slee & Allan, 2001)

The analysis indicates how the structure of schools as organizations creates special educational needs rather than differences or diversity between individual pupils. The lack of holistic, contextual, and ecological perspectives is visible because the measures used to send these children to special schools emerge from being entirely concerned only with pupils’ cognitive, emotional, and pathological problems. To rectify this misguided practice, we need to, as Artilés (2003) correctly argued, transcend the traditional individualistic perspective and infuse a social justice dimension so that the improvement of educational experiences and life opportunities for historically marginalized students are of central importance (pp. 194–195).

A Swedish study by Sonnander and Emanuelsson (1993) clearly indicated how children who were not diagnosed and labelled have managed both school life and professional/work life much better than those students with similar ability level (begåvningsnivå) but who were defined as in need of special support. One question, therefore, is why special schools should ever exist if this is really true (see also Persson, 2001). Although more research is needed, there are already credible indications that these schools and other special educational arrangements do more harm than good. In particular, what is tragic here is the situation of students with immigrant background who were subjected to dubious procedures, classification, and evaluation criteria both at regular primary schools, which focus on their cultural and ethnic background, and special schools, which focus on individual pathology (Bel Habib, 2001; Rosenqvist, 2007). This is a fertile ground on which to create structural/institutional discrimination unless it is rectified immediately (Labi, 2001).

To summarize, both the statistical and qualitative analysis, compiled in Losen & Orfield (2002, p. xviii) suggest some similar observations in the U.S.A. as in Sweden, although the statistical figures and the magnitude of the problem between these two countries vary considerably. These American studies suggest that racial, ethnic, and gender differences in special educational placements are due to many complex interacting factors, including unconscious racial bias on the part of school authorities, large resource inequalities that run along lines of race and class, unjustifiable reliance on IQ and other evaluation tools, educators’ inappropriate responses to the pressures of high-stakes testing, and power differentials between minority parents and school officials.

6. Discussion and Conclusion

Throughout the different parts in this paper, there are threads that are well represented in the current tapestry of ideas associated with postmodern theorizing on multiplicity of voices, the multiply constituted subject, and the social and historical construction of ethnicity and difference and its role in the distribution of power. What is too often missing in research in education is an integrated analysis. Researchers usually focus on one or the other component of a complex educational issue and give the erroneous impression that differences in social performance are due to differential cognitive differences among groups or individuals that are due to one or two factors. Some of the usual ones are linguistic factors, cultural deficits, cultural differences, and parent-child dyads (Berhanu, 2005a; 2005b; 2006; 2007). What is often ignored are the effects of power discourse, institutional intransigence, teacher-student relationship, pedagogy, classroom interactions, and the dispositions that young
people, for a whole variety of reasons, bring to their learning. The evidence produced by this work supports the conclusion that separate analysis of any one of these factors can provide neither a full picture nor an adequate explanation of problems related to something as complex as differential patterns of learning or disproportionality.

In this study, I adopted Vygotsky’s theory as a general framework. That is, cognitive development (learning) is a product of interaction with others in the presence of socio-historically developed tools that mediate intellectual activity. This is also in line with the philosophy of inclusive education in which the emphasis is on learning together within the regular educational framework. Vygotsky underlines the role of culture and social interaction as opposed to just interaction (as in Piaget) in the development of children’s cognitive processes. This belief in the role of social interaction led Vygotsky to formulate the *zone of proximal development* (ZPD), a concept of significant educational and instructional implications. The ZPD as a metaphor or construct has drawn great interest in the research community because of its dynamic developmental element that focuses on what a child can achieve with assistance of a more capable adult or peer. One of the implications of the ZPD in instruction and educational practices is that the conventional practices such as IQ tests, chronological or age-graded organization or learning environments, competition, and speed cannot be congenial to all diverse cultural groups. In cultural-historical theory, developmental stages simply index age norms in a given sociocultural space and time. Education aimed at *where the student is at* takes on new meaning in societies with increasing ethnic diversity (Portes, 1996; Moll, 1990).

Although in the works of Vygotsky and his followers, institutional/social structural domains are mentioned as having significant impact on children’s dispositions towards their school performance, the process under which the impact is felt (power discourses, the subtle workings of institutional culture, which is intricately bound with the wider political, social, and economic as well as cultural meaning systems and moral, values) have not been made explicit. Thus in this work an attempt has been made to identify the influences of the institutional culture of schools that distort or retard learning progress. These include (1) an absence of knowledge, understanding and sensitivity on the part of schools to how students from different cultural backgrounds learn; (2) the application of unreliable (wrong) assessment (evaluation) procedures and criteria for referral and placements; (3) the lack of culturally sensitive diagnostic tools; and (4) the static nature of the tests, including the cultural bias embedded in the tests. The problem surrounding the overrepresentation of ethnic minorities in special educational arrangements in Sweden is complex, and some of the evidence presented here also points to problems surrounding the home environment, including poverty; sociocultural related problems, family factors, and language problems; the lack of parental participation in decision making and the huge power distance between parents and school authority; institutional intransigence and prejudices; and large resource inequalities that run along lines of *race* and class. Similarly, Dyson & Gallannaugh (2008) argued, based on a very recent research on proportionality in England, that although the identification of children as having special educational needs may result most immediately from the construction of difference at the school and teacher levels, that construction is itself a response to educational and social inequalities. It follows that a proper understanding of disproportionality, capable of generating effective means of combating it, requires an analysis not only of processes of construction but also of the underlying processes and structures through which social and educational inequality are produced (p. 43).

Barbara Rogoff’s statements in the concluding chapter of her widely acclaimed book (1990) parallel my observations and analysis. She underscores the problems encountered by students who are grounded in one cultural system while attempting to function in another which, if not simply indifferent, provides no recognition that a huge cultural divide exists:
If differences in values and practices are handled with respect, children can benefit from learning new cultural systems while maintaining their “home” approach. Unfortunately, children dealing with two cultural systems often face a less supportive contact between them. The dominant culture may be seen as competing with that of the home culture, with a goal of eradicating the features of the home culture rather than using them to build an understanding of the new approach. This eradication mentality, stemming from differences in status between two cultural approaches, may make it rare for children to have the opportunity to become bicultural (an opportunity that would be advantageous for majority as well as minority children). Rather, many children end up not becoming skilled in any culture, whether because their home culture is disvalued and potential links are not exploited to help them learn the ways of the dominant culture, or because their home culture itself suffers such economic stress that the culture loses its strength and coherence, as may be the case for many very poor children (pp. 201-202).

Bauman (1992; 1998; 2001) argues eloquently that globalization has produced a shift from social rights to competition, productivity, standardization, and efficiency, and a shift from public to private and from social responsibility to individual (or family) responsibility. As a process, globalization is not linear, but contradictory and contested. Its impacts are unequal and differ on the basis of regions, classes, and people. The neo-liberal economy is dominating the world especially after the end of the cold war, and its particular form of capitalism is characterized by deregulating markets, reducing or changing the role of the state and most importantly, reducing social expenditure, including expenditure on education. This phenomenon has also been witnessed in the past 15 years even in Sweden in tandem with rising unemployment, issues of security, alienation, marginalization, and exclusion, creating a discourse of resentment along the lines of them versus us. This trend is inextricably intertwined with the dramatic increase of children and young people who are referred to special schools for intellectually disabled pupils (Särskolan). In this connection, the drive to improve standards and set a strict grading system is one area of problem that constructs special educational needs students as failing. Yet at the same time, there is a drive to educate all students within mainstream schooling (i.e., inclusive education as witnessed already in post-war Swedish history). The standards agenda that emerged in the 1990s because of the changes in the political climate, and the resulting impact on school policy, is one of the most insurmountable barriers to learning for special education needs students.

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