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Dear Colleagues,

TOJNED welcomes you. TOJNED would like to thank you for your online journal interest. The online journal system has been diffused very fast for last 5 years. TOJNED has continued to diffuse new trends in education to all over the world since January, 2011. We hope that the volume 6, issue 2 will also successfully accomplish our global education goal.

TOJNED is confident that readers will learn and get different aspects on education. Any views expressed in this publication are the views of the authors and are not the views of the Editor and TOJNED.

TOJNED thanks and appreciate all reviewers who have acted as reviewers for one or more submissions of this issue for their valuable contributions.

TOJNED, TASET, Governor State University, Vienna University of Technology & Sakarya University will organize the INTE-2016 (www.int-e.net) between July 13-15, 2016 in Vienna, Austria.

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BEYOND PROBLEM-BASED LEARNING: HOW A RESIDENCY MODEL AFFECTS THE EDUCATION OF PRE-SERVICE ELEMENTARY TEACHERS

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Abstract: In 2010, the state of Tennessee embraced the call to overhaul teacher education and required programs to adopt a residency model within K-12 schools. How exactly this would affect the various methods courses in a teacher education program? This paper provides a description of how two elementary education methods courses have shifted from simulation-style projects to projects that involve working with actual elementary students throughout the semester. This article presents an overview of the new residency style methods courses, along with how major assignments shifted to utilize the extensive time pre-service teachers would spend in the elementary school classroom.

INTRODUCTION

Recent trends in education have emphasized teacher education models that are more field-based with experiences in school occurring as early as possible. The call for reform was best summarized by Secretary of the Department of Education Arne Duncan when he stated, “America’s university-based teacher preparation programs need revolutionary change – not evolutionary tinkering” (2009). In Tennessee, statewide meetings were held for colleges of teacher education to investigate the medical model as a preferable framework to follow in the preparation of teachers (Hoffman, Hosokawa, Blake, Headrick, & Johnson, 2006). Extensive training for faculty and administrators began in 2009, with an emphasis on problem-based learning and using a residency model (Barron, Preston-Sabin, & Kennedy, 2013). As teacher educators, how this shift affects campus-based methods courses in mathematics and language arts is of great importance. This purpose of this article is to answer the questions: 1) What does the enactment of this reform look like in teacher preparation courses? and 2) How are methods courses impacted by the shift from simulation of teaching to actual implementation in elementary school classrooms?

METHOD

In order to best answer the above questions, documents were collected that would aid the understanding of how each methods class had shifted over the course of the transition. These documents included: syllabi, instructor notes, and schedules from the current and former instructors of both the language arts and mathematics methods courses. Each document was carefully analyzed for repetitions as well as changes in assignments and semester structures. This analysis was combined with the researchers’ own knowledge of the structure of the courses and how the courses have adapted and changed since 2010.

The balance of this paper is structured in two primary sections. The first describes our residency model in the preparation of elementary school teachers, which our university calls the Ready2Teach program, and how a mathematics methods course and language arts methods course have been modified to enact this new framework.

The second part is a detailed description of the adaptations to our methods courses through the shift to extensive time in the elementary school classroom.

Description of the Residency Model and Effects on Methods Courses

The Residency model of Ready2Teach, as implemented within our institution, includes a year-long residency in the elementary school classroom. This residency begins before the start of the fall semester with 50 hours of field placement that are refer to as pre-residency. During this time, the pre-service teacher (PST) meets with her mentor teacher before the start date of the local school district. The PSTs are expected to attend professional development meetings with the mentor teacher, assist in setting up the classroom, and be present on the first day of school when the elementary students arrive, as well as attend the entire first week of school.

The college fall semester, called the Residency I semester, involves PSTs enrolling in four methods courses, one field-preparation course, and spending 210 hours in their residency classroom. For more on the general structure of the program and sample scheduling, see Nivens (2013). The Ready2Teach redesign also allowed for the adjustment of a social studies methods course to be taught earlier and cover a broader range of content than the residency semester would have allowed (see Meier, Keith, & Dwyer, 2014).

The largest change to occur in the methods courses is the inclusion of approximately 32.5 hours of field experience per methods course in Residency 1, with four weeks of course time released to accommodate the required hours and enact a true residency. As all four methods courses do this concurrently, the PSTs spend 32.5 hours x 4 courses to meet 130 hours of their total 210-hour requirement for the semester. Essentially, each three-credit methods course functions as two credits of on-campus coursework, and one credit of applied field experiences. Table 1 shows how residency hours are acquired throughout the semester.

Table 1. Ready2Teach residency model semester schedule

Week #	ETSU Campus	Field Placement in Residency School
1.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
2.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
3.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
4.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
5.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
6.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
7.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
8.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
9.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
10.	M W or T R	8 hrs co-teaching (~2hrs per day, 4-5 x per week)
11.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
12.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
13.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
14.	Full time residency	32.5 hours co-teaching 7a.m. – 5p.m. M-F
15.	M W or T R	No requirements beyond making up lost time
16.	Final Exam Week	No requirements beyond making up lost time

Enactment in the Mathematics Methods Course

Early plans were to modify some assignments that were initially intended as simulations of teacher work and incorporate them within the field placement classroom. These two assignments were 1) analysis of student work/remediation plan, and 2) an assessment design project.

With the loss of coursework seat time to enable residency hours, PSTs were required to identify an elementary school student in need of remediation within the field placement classroom to which he or she was assigned. This had the advantage of helping a real student who needs assistance in mathematics learning. The difficulty from the teacher education side was in determining how to translate this into a successful completion of requirements for the course. A pilot of this modification occurred in the fall 2013 semester and was successful. In the fall 2014 semester this became a standard procedure.

A pilot process began for a second assignment in fall 2014, the Assessment Design project. Instead of designing a mathematics assessment as a simulation, PSTs worked cooperatively with their Residency I mentor teacher to design an assessment to be used with the students. The use of peer-reviewed journal articles and sources to design the assessment were discussed and researched before the four-week full residency placement occurred.

Enactment in the Language Arts Methods Course

Likewise, in the language arts methods course, assignments that had previously been simply simulations of real classroom experiences were modified to incorporate actual field experiences. The two modified assignments included 1) planning of a weeklong literacy unit, and 2) close reading lesson plan and instruction.

The first assignment required PSTs to use relevant instructional materials such as a basal reading series to plan a week long unit of literacy instruction. While PSTs were able to complete the planning process prior to the implementation of the new residency model, an important element was added in the fall of 2014 to this assignment. Rather than simply simulate a week of instruction for a fictional class, PSTs were able to collect relevant data from their field placement based on assessment of student needs and confer with their mentor teacher on appropriate instructional materials and modifications for their actual classroom.

Additionally, PSTs planned a close reading lesson plan using complex text. Previously, this lesson would have been primarily a theoretical plan or at best one that was carried out with peers in the college classroom. Because of the shift to a yearlong residency PSTs were able to carry out the close reading lesson plan with a small or large group of students at their field placement site. PSTs reported the benefits of carrying out their plan with actual students as well as the importance of the reflective processes they engaged afterwards with their mentor teachers.

From Simulation to Actual Implementation

The emphasis on time in the residency classroom provided opportunities for changes to be made in the Residency I methods coursework and assignment structure. In order to clearly illustrate the changes, examples are presented from both the mathematics and language arts methods courses. Because the PSTs complete the edTPA (Sato, 2014), these two content areas are most beneficial to study.

Mathematics Methods Example

The main projects of the semester are analysis of student work, planning remediation, designing assessments, lesson planning, and reflective teaching. Table 2 shows what these activities looked like before the transition to the Ready2Teach model and after. Details follow the table, describing how each assignment shifted to leverage the extensive field-based hours of the residency model.

Table 2. Mathematics methods course assignment changes

Project	Before Ready2Teach (Prior to 2012)	Full Ready2Teach implementation (Fall 2013 - present)
Analysis & Remediation in simulation	Student work samples provided by instructor. PSTs planned a month-long plan for sample student. Content focus: 2 nd grade addition.	Student work samples provided by instructor. PSTs planned a month-long plan for sample student. Content focus: 2 nd grade addition.
Analysis & Remediation of actual student	Not applicable/No such assignment	Actual K-6 student <i>identified by PST and mentor teacher</i> , individual sample collected through a diagnostic interview and then design a month-long remediation (and optionally implement with actual student).
Assessment Design	PSTs designed an assessment on their choice of math strand and grade level.	PSTs, <i>in collaboration with the mentor teacher</i> , design and administer an assessment to their field-based students.
Lesson Planning and Reflection	PSTs planned and taught one math lesson to teach in the field	PSTs actively co-teach throughout the semester. One lesson plan required for methods course.
	PSTs reflected on the lesson after teaching it	PSTs reflected on the lesson after teaching it.

Analysis & Remediation: Simulation

Before the Ready2Teach program, the project entitled Analysis and Remediation was used to teach PSTs how to analyze student work and plan a month-long remediation. The instructor provided a sample of student work, and together the PSTs would analyze this sample. Their task was to identify the students' mathematical misconceptions and misunderstandings and to write about 1.5 to 2 pages of analysis. They were also to select and read 2-3 professional articles related to this student's mathematical struggles. Once a class discussion had identified the primary misconceptions, each PST designed a remediation plan for the student to be implemented over the course of one month (see Nivens & Gann, 2014).

Analysis & Remediation: Actual Student

With the shift to residency, the simulation project became a practice experience of something that should be implemented in an actual classroom. With the Ready2Teach program, our PSTs now identify a student in their residency field placement and administer a diagnostic interview, which they write specifically for that child as described in Ashlock (2010) and van de Walle, Karp, and Bay-Williams (2013). Following this diagnostic interview, each PST writes an analysis of that student's work sample and creates a plan of remediation to take place over four weeks. For the methods coursework, they also write a rationale for the intervention strategies and sequence selected and submit for a course grade the diagnostic interview, scanned response of student work, their analysis and remediation plan. A brief report of the outcome of their project can be turned in for PSTs electing the optional implementation of their plan. Professional articles to support the plan are required, and these articles are integrated as part of the required readings for the course.

Assessment Design

The assessment design project requires the PSTs to develop an assessment on a mathematics topic their students will be covering during the time of their 4-week full-time residency (weeks 11-14 in Table 1) when they are not meeting in the college classroom. The first requirement is for the PSTs to locate and read 3 peer-reviewed journal articles on the math strand their assessment will cover. Journals that are highly recommended are *Teaching Children Mathematics* and *School Science and Mathematics*. Drawing from these articles and collaborating with their mentor teacher, the PSTs design an assessment that uses the strands of mathematical proficiency (Kilpatrick,

Swafford, & Findell, 2001) as the basis for their questions. In conjunction with the assessment, the PSTs write an accompanying rationale. As an example of what the whole process looks like, Watanabe's (1996) article is a required reading. The only change that residency has had on this assignment is that our PSTs now design an assessment that can actually be administered at the mentor teacher's discretion.

Lesson Planning and Reflection

The lesson planning and reflection piece is the least changed element of the mathematics methods course. Before Ready2Teach, PSTs still had some hours of field placement, primarily for observation, and they were required to teach one mathematics lesson before the end of the semester. With the transition to the residency model, this project has a wider window of when it can be completed. Typically, this project is completed during the 4-week period when the PSTs are exclusively in the elementary school classroom.

Language Arts Methods Example

The main goals of the semester are instructional planning, considering modifications, using assessments and data to design instruction, and reflective teaching. Table 3 shows what these activities looked like before and after the implementation of Ready2Teach including some considerations of prior coursework. Specifics of the transitions are considered directly following the table.

Table 3. Language arts methods course assignment changes

Project	Before Ready2Teach (Prior to 2012)	Full Ready2Teach implementation (Fall 2013 - present)
Literacy Block Lesson Planning	PSTs planned guided reading lesson for a simulated literacy block using relevant materials. Content focus: Monitoring comprehension strategies.	Small group guided reading lesson planning moved to Junior year course work. PSTs confer with mentor teachers and collect relevant assessment data from field placement to plan a week long literacy block.
Lesson Plan Preparation and Design	PSTs design a guided reading lesson plan focusing on broad comprehension skills.	In preparation for close reading lesson in the field, PSTs analyze a fiction and non-fiction text appropriate for their grade level using the Text Complexity Rubric and collaborate with their mentor teacher to create a close reading lesson.
Lesson Plan Implementation and Reflection	PSTs carry out the lesson plan with peers in the college classroom.	PSTs carry out the close reading lesson plan with a small or large group at their field placement site. PSTs reflected on the lesson after teaching with mentor teacher and via reflection paper due to professor.

Literacy Block Planning Using a Field Placement Model

With the shift to a residency model, PSTs were given the opportunity to participate in an activity which closely mirrored the actual happenings in the elementary classroom. PSTs conferred with mentor teachers to plan a week long unit of study appropriate for their particular grade level of students. They used knowledge of assessment data, curricular and supplemental materials from their site, and the guidance of their mentor teacher and professor to design five days of literacy instruction. In doing so, PSTs were required to consider not only instructional procedures, but rationale for these procedures and modifications for varying groups of learners.

Lesson Plan Preparation and Design

English language arts classrooms across the country are highlighting the importance of text complexity and close reading (Fisher & Frey, 2012; Hinchman & Moore 2013). Prior to the implementation of Ready2Teach, our PSTs gained only a theoretical understanding of these concepts through scholarly articles and classroom discussion. In fall of 2014, this understanding was expanded by the inclusion of a related field component in addition to the required readings and discussion. In preparation for teaching a lesson in the field, PSTs chose a fiction and nonfiction text to analyze using the Text Complexity Rubrics used commonly in schools. PSTs then conferred with their mentor teacher to plan a close reading lesson based on a particular need in their field placement and selected a text also approved by their mentor teacher.

Lesson Plan Implementation and Reflection

After collaboration with peers, mentor teachers, and their English language arts professor, PSTs carried out the close reading lesson plan with a small or large group of students at their field placement site. Afterwards, PSTs reflected on the lesson with their mentor teacher and via a reflection paper due to their professor. The addition of field hours in Residency 1 has positively impacted the reflective process in the language arts methods course. Primarily, the encouragement of conferring with their mentor teacher both before and after engaging in instruction has increased acquisition of concepts. Also, PSTs tend to share more insightful commentary in the college classroom as they are able to connect their theoretical learning with real life applications.

CONCLUSION

While the transition to a residency model has been a “revolutionary change” in our program, the changes have provided an opportunity to enrich the education of our PSTs. In addition to changing the scope of major assignments, college course discussions can begin with the common ground of all PSTs already serving within their schools. The advantage to being in the elementary school classroom on day one of the school year cannot be overstated. By adopting a residency model, our simulation projects are now used as a monitored practice exercise before our PSTs try things out their own in both the mathematics and language arts methods courses. Moreover, since the PSTs still see their college instructors, college faculty can monitor these projects as they implement them in the elementary school classroom during the semester. With further work, these new projects can be modified to maximize the use of both course time at the college as well as residency time in the classroom.

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COMPARING THE EFFECTIVENESS OF IN-PERSON AND VIDEO-BASED DIALOGIC READING TRAINING

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Abstract: Dialogic reading is a shared reading activity designed to increase verbal interactions between parents and their preschool-aged children. The current study compares the results of in-person dialogic reading training to video-based training. The purpose of the study is to measure and compare the effect each program type has on the expressive language and vocabulary development of preschool-aged “children of promise” identified as “at-risk” by the public school system. Children’s expressive language was measured prior to and after receiving training using the Individual Growth Developmental Indicators (IGDI) picture naming assessment. Children whose parents participated in the video-based intervention ($p < .01$) and children whose parents participated in the in-person training ($p < .05$) made significant gains in expressive language scores from pre-test to post-test. There was not a significant difference between groups at the post-test, showing both programs were effective in increasing verbal interactions between parents and their preschool-aged children.

INTRODUCTION

Dialogic reading is a structured form of shared reading that is designed to encourage children’s oral language, vocabulary, and grammar skills (Justice, McGinty, Piasta, Kaderavek, & Fran, 2010). Dialogic reading shifts the traditional read aloud interaction from being adult-led to child-led. During dialogic reading, parents ask open-ended questions and expand upon their children’s comments and ideas. Parents encourage participation through providing feedback and adjusting their verbal interactions based on their child’s interests and ability (Whitehurst Arnold, Epstein, Angell, Smith, & Fischel, 1994). The verbal interactions utilized during dialogic reading expand young children’s vocabularies (Wilde & Sage, 2007; Jalongo & Sobolak, 2011) and their use of narratives, questions, and positively impact children’s verbal responses (Beals, DeTemple, & Dickenson, 1994). Dialogic reading techniques positively influence children’s language skills because they encourage parents to expand on children’s conversations, redirect conversation to encourage children’s use of particular types of language (e.g. encouraging children to use descriptive words), and expect increasingly complex word choices from children as language develops (Snow, 1983).

Video-based training is cost effective and convenient. However, researchers have found that parents with lower educational levels, which represent many parents of promise, typically prefer in-person instruction (Huebner & Meltzoff, 2005). Also, researchers have questioned the effectiveness of video-based instruction in teaching expressive language skills (Briesch, Chafouleas, LeBel, & Blom-Hoffman, 2008). Therefore, the current study compares the effect in-person and video-based dialogic reading training has on preschool-aged children’s expressive language and vocabulary.

METHODS

The current study compares the results of a bi-weekly in-person dialogic reading training conducted at a public preschool over the course of ten weeks to a smaller study providing similar information, to similar parents, in a condensed format on video over a twelve-week period.

IN-PERSON DIALOGIC READING INTERVENTION

The in-person dialogic reading component of this study was conducted in a public preschool that provides preschool programs for children three to five classified as “at risk” based on screening results of children’s expressive and receptive language, fine and gross motor skills, and social / emotional and intellectual processing. At the time of the study, it served the second most severe Limited English Proficient population in the county. The school population was 52-percent low-income and had 71-percent limited-English proficiency. The preschool classes incorporate daily mandatory “Family Time” for children enrolled in their preschool program. During this time, parents are asked to

read to their children for 15 minutes each morning before leaving their children at school. These children and families deemed “at risk” by the public school system will be referred to as children and families of promise to reflect their potential and the assets they bring to school (Blasi, 2002).

Parents received dialogic reading training every other week for ten weeks. On Mondays parents received 15 minutes of dialogic reading training focusing on the dialogic reading strategies *Comment, Ask, and Respond (CAR)* and *1, 2, 3 Tell Me What You See*. The *CAR* strategy teaches parents to Comment and wait, Ask questions and wait, and Respond and add more. This strategy is part of the *Language is the Key Program* designed by Washington Research Institute. This technique was taught for the first two weeks of training. The last three weeks of training focused on a technique designed by the author called *1, 2, 3 Tell Me What You See*. This strategy asks children to comment on what they see in order to encourage expressive language, parents to teach new words to build expressive and receptive vocabulary, and to connect the story to the child’s life to help children connect the story to background knowledge or experiences.

On Tuesdays parents watched the dialogic reading method being modeled. Wednesdays parents received parent notes including sample questions they could ask their child while sharing a copy of the book being taught. Five books were chosen by the teachers. All parents were taught with and used the same five books.

Forty-one parents and children were involved in this study. Twenty parents received dialogic reading training and twenty-one parents served as a control group receiving no dialogic reading training. A majority of the parents participating in the program spoke Spanish in the home (75% of the dialogic reading group and 61% of the traditional Family Time group).

Students’ expressive language and vocabulary were measured using the picture-naming portion of the Individual Growth Developmental Indicators (IGDI) test. The IGDI test is designed to monitor the literacy development of young children. Students taking the picture-naming test are presented with pictures on cards and asked to name as many of the objects as they can in one minute. The number of words correctly identified and the number of words attempted are recorded. Students’ picture naming ability was assessed prior to the start of the study and at the conclusion of the intervention. The picture-naming portion of the IGDI has been found to be a valid and reliable (McConnell, Priest, Davis, & McEvoy, 2002).

RESULTS

Paired t-tests were performed between groups and within groups across time to determine the effect dialogic reading training had over time on program participants. There was not a significant difference in the number of words correctly identified by children in either the intervention or control group at the time of the pre-test on the IGDI. However, children whose parents received dialogic reading training acquired significantly more words ($p < .01$) from pre-test to post-test than children in the traditional Family Time group (Table 1). Increases in expressive vocabulary development are especially important because research has consistently shown the importance expressive and receptive vocabulary play in young children’s ability to learn to read (Wasik, 2010). This finding supports the effectiveness of using in-person dialogic reading training for increasing young children’s expressive language skills.

Table 1: In-Person Training and Control Groups’ Pre-Post IGDI Scores

	In-Person Training Group (N=20)		Family Time Control Group (N=21)	
	Pre-Test	Post-Test	Pre-Test	Post-Test
	M	M	M	M
Number Correct	11.45	14.32*	11.52	12.48

* $p < .01$

VIDEO-BASED DIALOGIC READING INTERVENTION

The video-based dialogic reading training was studied at a similar public early childhood center serving children and parents of promise. Video-based dialogic reading training was provided to nine parents using a twelve-minute video that was sent home at the beginning of the program. The parents and children included in this group were evenly divided between parents and children who spoke English, Spanish, and both languages in the home. Each week children brought home a children’s book and corresponding parent notes that provided parents sample questions to

ask while reading. No additional dialogic reading training was given. The length of study was expanded from ten to twelve weeks due to holidays and days students were not in attendance for this school.

Video-based training was provided because it is an easy and economical way to provide training to parents. Providing materials that parents can use and view at home can help overcome some of the main obstacles to parent involvement including lack of time, lack of training, and lack of understanding (Wherry, 2010). Arnold, Lonigan, Whitehurst, & Epstein (1994) found that using a videotape to teach the dialogic reading method worked effectively to increase parents' use of dialogic reading skills with children with average or above average expressive and receptive language skills from middle or upper Socio-Economic Status (SES) parents. However, the effectiveness of video-based dialogic training specifically for parents of promise has not been studied.

The dialogic reading training provided on the video used the acronym DARE to help parents learn dialogic reading techniques. DARE was a combination of the CAR and 1,2,3 Tell Me What You See strategies taught to parents in the first study. The video-based training focused on teaching one strategy instead of two to keep things easy for parents receiving video training. However, the content of both training sessions was essentially the same. The DARE strategy, developed by the author, asks parents to:

- Discuss the book with their child and ask what their child sees, expand upon their child's responses adding more detail, and asking their child to repeat the extended responses.
- Ask their child questions about the pictures and teach new vocabulary related to the illustrations.
- Read the story aloud.
- Encourage their child to connect the story to real life.

Participants were asked to share a book with their child for 10-15 minutes a day choosing whichever steps of DARE to implement they thought were appropriate depending on their child's interest and readiness level. The books used for this study were chosen and accompanying parent notes were written by the author as part of a program called PARTNERS (Parents as Reading Teachers Nightly Encouraging Reading Success). The books included in the PARTNERS program were chosen because of their detailed and varied illustrations including culturally relevant items children are familiar with that could be used for discussion and retelling. All books selected included a simple plot and supported preschool skills needed according to *The Creative Curriculum Developmental Continuum for Ages 3-5*. Therefore, they were appropriate to teach cognitive development, logical thinking, language development, emergent literacy, and social / emotional development. The books represented a variety of genres and were sent home randomly each week with the corresponding parent notes.

The video-based program's parent notes, similar to those provided to parents in the in-person intervention, provided sample questions parents could use to encourage discussion and language with their child. Sample information provided on the parent notes includes a summary of the story, things that could be taught, a review of the DARE strategy and how it could be used over the week, sample questions, and related vocabulary.

RESULTS

Paired t-tests were performed to determine the effect video-based dialogic reading training had over time on program participants. Children whose parents participated in the video-based dialogic reading training acquired significantly more words ($p < .01$) from pre-test to post-test based on their IGDI scores (Table 2).

Table 2: Video-Based Training Group's Pre-Post IGDI Scores

	Video-Based Training Group	
	Pre-Test	Post-Test
	M	M
Number Correct	14.55	19.00*

* $p < .01$

DISCUSSION

Children in both studies (in-person bi-weekly training and video-based training) were administered the picture naming portion of the IGDI at the beginning and end of the interventions. The in-person dialogic reading intervention group included 20 children and their parents. The video-based training study was smaller, including only 9 children and parents. In order to make comparisons between the effect each type of training had on children's

expressive language, children in both studies were matched according to their initial IGDI scores, chronological age, and language(s) spoken in the home.

Because students' IGDI pre-test scores from both studies were matched, there was not a significant difference in IGDI scores between the two groups before the intervention. Paired t-tests were performed between matched groups and within groups across time to determine the effect dialogic reading training had over time on program participants (in-person training and video-based training). Table 3 shows that there was a significant increase in children's expressive language from pre-test to post-test for both intervention groups, in-person dialogic reading training ($p < .05$) and the video-based dialogic reading training ($p < .01$). However, it is important to note that even though children of parents who received the video training showed a greater increase in expressive language from pre-test to post-test, there was not a significant difference between groups at the post-test (Table 4), showing both program's effectiveness.

Table 3: Matched In-Person and Video-Based Groups' Pre-Post IGDI Scores

	In-Person Training Group (N=9)		Video-Based Training Group (N=9)	
	Pre-Test	Post-Test	Pre-Test	Post-Test
	M	M	M	M
Number Correct	14.33	17.78**	14.55	19.00*

* $p < .01$

** $p < .05$

Table 4: In-Person and Video-Based Groups' IGDI Scores Matched Comparison

	Pre-Test Comparison (N=9)		Post-Test Comparison (N=9)	
	In-Person Training	Video Training	In-Person Training	Video Training
	M	M	M	M
Number Correct	14.33	14.55	17.78	19.00

LIMITATIONS

The relatively small number of participants involved in each study is a limitation. Another possible limitation to the generalizability of these findings is the way that eligibility for the preschool programs was determined. Eligibility requirements identifying children of promise for each state are based on local need. Eligibility criteria may vary based on the needs of the local programs and communities (Illinois State Board of Education Early Childhood Division, 2011). The way that children of promise are identified in other regions, states, or countries may differ.

An area for further research is how and how often the video-based training materials were used. Because parent notes were included with each book, the video-based program may have been able to be successfully implemented with children without the video. In the future, a larger study including information regarding participants' use of the training video would help strengthen the claim that the video was integral to the program's success. Another area for further study is the books used for the interventions. The books used for the initial in-person bi-weekly training aligned with the preschool curriculum. However, the illustrations included were often somewhat simplistic or repetitive, possibly limiting the responses and interactions of parents and children in this study. Parents who received the video-based training received materials from the PARTNERS Program that were more appropriate for dialogic reading. This possibly gave these parents better tools to effectively implement dialogic reading techniques.

CONCLUSIONS

Dialogic reading is an effective tool for increasing the vocabulary and expressive language of children of promise. It provides young children with opportunities to share the reading experience with their parents and provides them with exposure to new words in meaningful ways (Hart & Risley, 1995). Participating in dialogic reading provides young children with many benefits including increased opportunities for joint attention, modeling of new vocabulary, increased questioning, and feedback (DeBaryshe, 1995). The results of the studies discussed in this paper support the effectiveness of both in-person dialogic reading instruction and video-based training for children and parents of promise. Therefore, preschools that wish to implement dialogic reading training for their parents can

utilize whichever format fits the needs of their parents and still expect increases in children's expressive language and vocabulary.

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DIFFERENTIATING CHARTER FROM NON-CHARTER SCHOOLS: A STATEWIDE INVESTIGATION

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Abstract: In this study, the extent to which charter schools could be differentiated from non-charter elementary, middle, and high schools in Texas was investigated. Statewide archival data from the Texas Education Agency Academic Excellence Indicator System were obtained on all Texas public schools, charter and non-charter, for the 2010-2011 school year. Canonical stepwise discriminant analyses were conducted to determine whether specific school characteristics (i.e., Percent of Full-Time Beginning Teachers, Percent of Black Student Enrollment, Percent of Student Enrollment Who Were Economically Disadvantaged, Mobility Rate, Percent of Disciplinary Alternative Education Program Placements, Percent of Hispanic Student Enrollment, Percent of Bilingual/English Enrollment, Percent of Limited English Proficient Student Enrollment, and Percent of Students Who Were At-Risk) could differentiate charter from non-charter schools at each campus level. All three canonical stepwise discriminant function analyses were statistically significant. The canonical functions provided strong differentiation in the school characteristics between charter and non-charter schools at the elementary, middle, and high school levels. Of interest is that the school characteristic that most strongly discriminated between charter and non-charter schools was the percentage of full-time beginning teachers. Implications of our results are discussed.

Keywords: Beginning teachers, charter, elementary, middle and high schools.

Differentiating Charter From Non-Charter Schools: A Statewide Investigation

With the passage of the No Child Left Behind Act of 2001 (2002), Texas school administrators are mandated to address issues in low performing schools (Forte, 2010). Low performing schools are a major issue for school administrators because of the risk in meeting Annual Yearly Progress as mandated by the No Child Left Behind Act (Foley & Nelson, 2011). Additionally, schools are required to have teachers who are highly qualified as well as address concerns of teacher quality (Darling-Hammond & Sykes, 2003; 2002; Terry, 2010).

As required by the No Child Left Behind Act, the mandate for highly qualified teachers and the risk of not meeting Annual Yearly Progress requirements, teacher quality is a major priority for school administrators (Alliance For Excellent Education, 2004; Hanushek & Rivkin, 2010). As such, the provisions for accountability by the No Child Left Behind Act on schools for not meeting benchmarks provided an impetus for school administrators to seek out teachers who are highly qualified (Hanushek & Rivkin, 2010). A highly qualified teacher is described in the No Child Left Behind Act (2001) as having a bachelor's degree and a state certification with competencies in both teaching and subject skills (Phillips, 2010).

In Texas, charter schools face a growing concern relative to the quality of teachers they employed (Wei, Patel, & Young, 2014). As such, attracting high-quality teachers has been a challenge for school administrators (Sass, Flores, Claeys, & Perez, 2012). Additionally, issues of teacher attrition are a growing problem as administrators struggle to attract and retain high-quality teachers especially with the high number of beginning teachers in charter schools (Sass et al., 2012; Texas Association of School Boards, 2012; Wei et al., 2014). Moreover, researchers (Darling-Hammond & Sykes, 2003; Hanushek & Rivkin, 2010; Sass et al., 2012; Wei et al., 2014) reported high percentages of Hispanic and Black students in low performing charter schools suggesting the need for experienced high-quality teachers.

Statement of the Problem

America's educational system faces many challenges with providing experienced teachers in low performing schools (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012b). To a further extent, charter schools in Texas often employ teachers with less experience than teachers in non-charter schools (Texas Association of School Boards, n.d.; Wei et al., 2014, 2009). In Texas charter schools, new teachers

lack the proper preparation and induction to address the needs of low performing schools (Wei et al., 2014). Additionally, charter schools enroll a large percentage of Hispanic and Black students, as well as students who are economically disadvantaged (Kelly & Loveless, 2012; Penning & Slate, 2011; Texas Association of School Boards, 2009, 2012).

Significance of the Study

After an extensive review of the literature, studies in which the extent to which school characteristics and school types (i.e., charter and non-charter) correlated with school performance were limited. Researchers (Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012) have suggested a relationship between beginning teachers and low performing schools existed and recommended further studies to reduce the gap in the literature. In this study, data from the 2010-2011 school year for Texas elementary, middle, and high school charter and non-charter schools were analyzed to contribute to the existing literature and encourage additional research concerning the characteristics of low performing schools.

Purpose of the Study

The purpose of this study was to determine the extent to which charter schools could be differentiated from non-charter elementary, middle, and high schools in Texas. A secondary purpose was to determine if the percentage of beginning teachers was higher in charter schools than in non-charter schools. By identifying which school characteristics discriminate between charter and non-charter schools continued importance of the relationship between percentage of beginning teachers and non-charter schools could be demonstrated.

Research Questions

The following research questions were addressed in this study: (a) What school characteristics best discriminate charter from non-charter elementary schools in Texas?; (b) What school characteristics best discriminate charter from non-charter middle schools in Texas?; and (c) What school characteristics best discriminate charter from non-charter high schools in Texas schools?

METHOD

Participants

Data from the Texas Education Agency Academic Excellence Indicator System for all traditional (K-5, 6-8, & 9-12) public elementary charter ($n_s > 150$), elementary non-charter ($n_s > 4,150$), middle charter ($n_s > 40$), middle non-charter ($n_s > 1,500$), high school charter ($n_s > 50$), and high school non-charter schools ($n_s > 1,000$) for the 2010-2011 school year in the State of Texas were utilized in this study. All non-traditional schools were excluded from this investigation due to their unique nature. Data for Texas charter and non-charter schools by campus level for each of the 10 school characteristics (i.e., percentages of beginning teachers, mobility rate, percentages of bilingual/ESL students, Black student percentages, Hispanic student percentages, percentages of students who were economically disadvantaged, percentages of Limited English Proficient students, percentages of students who were not economically disadvantaged, percentages of students who were in Disciplinary Alternative Education Programs, percentage of students labeled as being at-risk) were analyzed.

Instrumentation and Procedures

Archival data were downloaded from the Texas Education Agency Academic Excellence Indicator System website. Data were obtained on all Texas traditional K-12 public schools ($n_s > 6,900$) for the 2010-2011 school year. Data specific to school type (i.e., charter and non-charter), school characteristics were obtained. The Texas Education Agency (2014) defines a charter school as a public school that provides an educational facility for students in Texas through a charter that is contracted through a grant such as through the State Board of Education

RESULTS

Prior to conducting a canonical discriminant function analysis procedure, its underlying assumptions were checked. Regarding the standardized skewness coefficients (i.e., the skewness value divided by its standard error) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by its standard error) for all three school levels (i.e., elementary, middle school, and high school), 42 of the 60 coefficients were not within the range of normality, $+/- 3$ (Onwuegbuzie & Daniel, 2002). The assumption for the Box's Test of Equality of Covariance was violated for all three school levels. Although the assumptions for Box's M were not met, the robustness of a discriminant analysis procedure made it appropriate to use on the data in this study (Field, 2009). Readers are referred to Tables 1 through 6 for the descriptive statistics for charter and non-charter schools by campus level.

Table 1

Descriptive Statistics for Elementary Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	28.36	29.32
Black Students	31.56	31.98
Students Not Economically Disadvantaged	24.72	26.21
Students Who Were Economically Disadvantaged	75.28	26.21
Mobility Rate	19.86	17.11
Students in Disciplinary Alternative Education Programs	0.00	0.00
Hispanic Students	49.27	33.70
Bilingual/English as a Secondary Language Students	22.36	25.58
Limited English Proficient Students	22.98	25.50
Students Who Were At-Risk	44.85	27.14

Table 2

Descriptive Statistics for Elementary Non-Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	3.54	4.91
Black Students	11.84	16.46
Students Not Economically Disadvantaged	34.02	26.60
Students Who Were Economically Disadvantaged	65.98	26.60
Mobility Rate	16.95	9.04
Students in Disciplinary Alternative Education Programs	0.23	0.98
Hispanic Students	51.54	30.70
Bilingual/English as a Secondary Language Students	22.74	21.40
Limited English Proficient Students	23.44	21.53
Students Who Were At-Risk	47.00	21.76

Table 3

Descriptive Statistics for Middle School Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	33.29	28.14
Black Students	25.89	29.18
Students Not Economically Disadvantaged	22.95	23.99
Students Who Were Economically Disadvantaged	77.04	23.99
Mobility Rate	21.04	18.53
Students in Disciplinary Alternative Education Programs	0.01	0.04
Hispanic Students	59.80	33.65
Bilingual/English as a Secondary Language Students	16.37	19.14
Limited English Proficient Students	16.60	18.57
Students Who Were At-Risk	41.49	21.84

Table 4

Descriptive Statistics for Middle School Non-Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	4.54	5.12
Black Students	12.16	15.79
Students Not Economically Disadvantaged	34.02	26.60
Students Who Were Economically Disadvantaged	66.00	26.60
Mobility Rate	16.95	9.04
Students in Disciplinary Alternative Education Programs	0.23	0.99
Hispanic Students	51.54	30.70
Bilingual/English as a Secondary Language Students	22.74	21.40
Limited English Proficient Students	23.44	21.53
Students Who Were At-Risk	47.00	21.76

Table 5

Descriptive Statistics for High School Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	21.80	21.36
Black Students	19.05	21.56
Students Not Economically Disadvantaged	29.48	25.98
Students Who Were Economically Disadvantaged	70.51	25.98
Mobility Rate	57.52	28.24
Students in Disciplinary Alternative Education Programs	0.10	0.60
Hispanic Students	53.04	30.35
Bilingual/English as a Secondary Language Students	5.76	10.70
Limited English Proficient Students	6.05	11.00
Students Who Were At-Risk	76.52	26.12

Table 6

Descriptive Statistics for High School Non-Charter Schools in Texas by School Characteristics

School Characteristics	M%	SD%
Beginning Teachers	4.62	6.43
Black Students	11.98	18.06
Students Not Economically Disadvantaged	45.36	25.59
Students Who Were Economically Disadvantaged	54.64	25.59
Mobility Rate	33.74	33.50
Students in Disciplinary Alternative Education Programs	5.06	11.08
Hispanic Students	43.80	31.20
Bilingual/English as a Secondary Language Students	4.50	9.36
Limited English Proficient Students	4.83	9.60
Students Who Were At-Risk	55.06	27.33

In this study a canonical stepwise discriminant function analysis was utilized to address all three research questions. Regarding the first research question, what school characteristics best differentiate charter from non-charter elementary schools in Texas, school type (i.e., charter and non-charter) was used as the grouping variable and 10 school characteristics (i.e., percentages of beginning teachers, mobility rates, percentages of bilingual/ESL students, Black student percentages, Hispanic student percentages, percentages of students who were economically disadvantaged, percentages of Limited English Proficient students, percentages of students who were not economically disadvantaged, percentages of students who were in Disciplinary Alternative Education Programs, percentages of students labeled as being at-risk) constituted discriminating variables. The canonical stepwise discriminant function analysis, used to discriminate elementary charter schools ($n = 162$) from non-charter schools ($n = 4,159$), was statistically significant, $\chi^2(5) = 1406.42$, $p < .001$ and accounted for 28% of the between-groups variance (canonical $R = .52$; Wilks' $\Lambda = .72$, $p < .001$). Group centroids relative to Texas elementary schools for charter and non-charter schools were 3.14 and -0.12 respectively, indicated that this function strongly differentiated between the two school types. The standardized discriminant function coefficients for the five statistically

significant school characteristics in this analysis were: Teacher Beginning Full Time Percentage (Standardized Coefficient = .90); percentage of Black students (Standardized Coefficient = .40); percentage of students who were in Disciplinary Alternative Education Programs (Standardized Coefficient = -.14); percentage of Hispanic students (Standardized Coefficient = .20); and percentage of students labeled as being At-risk (Standardized Coefficient = -.20). An examination of the standardized coefficients for these variables, using a cutoff coefficient of 0.3 (Lambert & Durand, 1975), indicated that two variables contributed most to the canonical function. The percentage of beginning full-time teachers and the percentage of Black student enrollment had the largest contribution to group differentiation. Readers are referred to Table 7 for these standardized coefficients. Readers are referred to Table 8 for a list of all 10 characteristics.

Table 7

Standardized Canonical Discriminant Coefficients by School Characteristics for Texas Elementary Schools K-5

School Characteristic	Coefficient
Beginning Teachers	0.90
Black Students	0.40
Students in Discipline Alternative Education Program	-0.14
Hispanic Students	0.20
Students Who Were At Risk	-0.20

Table 8

Pooled Within-Groups Correlations by School Characteristics for Texas Elementary Schools K-5

School Characteristic	Coefficient
Beginning Teachers	0.92
Black Students	0.38
Students Who Were Not Economically Disadvantaged	-0.14
Students Who Were Economically Disadvantaged	0.14
Mobility Rate	0.10
Students in Discipline Alternative Education Program	-0.08
Hispanic Students	-0.03
Bilingual/ESL Students	-0.03
Limited English Proficient Students	-0.02
Students Who Were At Risk	-0.02

Note. Limited English Proficient was not used in the analysis.

Regarding the second research question, the canonical stepwise discriminant function analysis used to discriminate middle school charter schools ($n = 45$) from non-charter schools ($n = 1,578$), was statistically significant, $\chi^2(7) = 478.34$, $p < .001$ and accounted for 26% of the between-groups variance (canonical $R = .50$; Wilks' $\Lambda = .74$, $p < .001$). Group centroids relative to Texas middle schools for charter and non-charter schools were 3.47 and -0.10 respectively, indicated that this function strongly differentiated between the two school types. The standardized discriminant function coefficients for the statistically significant school characteristics in this analysis were: Teacher Beginning Full Time Percentage (Standardized Coefficient = .87); percentage of Black students (Standardized Coefficient = .29); percentage of students who were in Disciplinary Alternative Education Programs (Standardized Coefficient = -.30); percentage of Hispanic students (Standardized Coefficient = .20); percentage of students labeled as being At-risk (Standardized Coefficient = -.37); and mobility rate (Standardized Coefficient = .22). An examination of the standardized coefficients for these variables, using a cutoff coefficient of 0.3 (Lambert & Durand, 1975), indicated that three school characteristics contributed most to the canonical function. The percentage of beginning full-time teachers, percentage of Black students, and mobility rate had the largest contribution. Readers are referred to Table 9 for the standardized coefficients. An examination of the pooled-within-groups correlations, using a cutoff of 0.3 (Lambert & Durand, 1975), revealed that one of the 10 discriminating variables (beginning full-time teachers), contributed to the canonical function. Readers are referred to Table 10 for a list all 10 characteristics.

Table 9

Standardized Canonical Discriminant Coefficients by School Characteristics for Texas Middle Schools 6-8

School Characteristic	Coefficient
Beginning Teachers	0.87
Black Students	0.29
Mobility Rate	0.30
Disciplinary Alternative Education Programs	-0.30
Hispanic Students	0.20
Bilingual/English as a Secondary Language Students	0.22
At-Risk Students	-0.37

Table 10

Pooled Within-Groups Correlations by School Characteristics for Texas Middle Schools 6-8

School Characteristic	Coefficient
Beginning Teachers	0.90
Black Students	0.30
Bilingual/English as a Secondary Language Students	0.22
Limited English Proficient Students	0.22
Students Not Economically Disadvantaged	-0.20
Students Who Were Economically Disadvantaged	0.20
Disciplinary Alternative Education Programs	-0.17
Mobility Rate	0.12
Hispanic Students	0.10
Students Who Were At-Risk	0.07

Note. Students who were economically disadvantaged were not used in the analysis.

Regarding the third research question, the canonical stepwise discriminant function analysis used to discriminate high school charter schools ($n = 100$) from non-charter schools ($n = 1,457$), was statistically significant, $\chi^2(5) = 638.04$, $p < .001$ and accounted for 34% of the between-groups variance (canonical $R = .59$; Wilks' $\Lambda = .66$, $p < .001$). Group centroids relative to Texas middle schools for charter and non-charter schools were 2.72 and -0.18 respectively, indicated that this function strongly differentiated between the two school types. The standardized discriminant function coefficients for the statistically significant school characteristics in this analysis were: Teacher Beginning Full Time Percentage (Standardized Coefficient = .87); percentage of Black students (Standardized Coefficient = .09); percentage of students who were in Disciplinary Alternative Education Programs (Standardized Coefficient = -.31); mobility rate (Standardized Coefficient = .52); and percentage of Limited English Proficient students (Standardized Coefficient = -.10). An examination of the standardized coefficients for these variables, using a cutoff coefficient of 0.3 (Lambert & Durand, 1975), indicated that three variables contributed most to the canonical function. The percentage of beginning full-time teachers, percentage of students who were in Disciplinary Alternative Education Programs, and mobility rate had the largest contribution. Readers are referred to Table 11 for the standardized coefficients. An examination of the pooled-within-groups correlations, using a cutoff of 0.3 (Lambert & Durand, 1975), revealed that three of the 10 discriminating variables (beginning full-time teachers, mobility risk, and students labeled as being at risk), contributed to the canonical function. Readers are referred to Table 12 for a list all 10 characteristics.

Table 11

Standardized Canonical Discriminant Coefficients by School Characteristics for Texas High Schools 9-12

School Characteristic	Coefficient
Beginning Teachers	0.88
Black Students	0.10
Students in Disciplinary Alternative Education Programs	-0.31
Mobility Rate	0.52
Limited English Proficient Students	-0.10

Table 12

Pooled Within-Groups Correlations by School Characteristics for Texas High Schools 9-12

School Characteristic	Coefficient
Beginning Teachers	0.83
Mobility Rate	0.36
Students Who Were At-Risk	0.30
Students in Disciplinary Alternative Education Programs	-0.19
Students Who Were Economically Disadvantaged	0.18
Students Who Were Not Economically Disadvantaged	-0.18
Black Students	0.16
Hispanic Students	0.04
Bilingual/English as a Secondary Language Students	-0.01
Limited English Proficient Students	-0.01

Note. Bilingual/English as a Secondary Language students were not used in the analysis.

Discussion

In this study, differences between charter and non-charter schools in Texas elementary, middle, and high school campuses were identified. Archival data were obtained on all Texas traditional K-12 public schools ($n_s > 6,900$) for the 2010-2011 school year. All three canonical stepwise discriminant function analyses used to discriminate charter from non-charter schools were statistically significant. An examination of the group centroids for all three campus levels indicated that the functions strongly differentiated between charter and non-charter schools. Of the 10 school characteristics, the percentage of beginning full-time teachers had the largest contribution to the canonical function.

A comparison of the percentage of beginning teachers indicated a higher percentage in charter schools as compared to non-charter schools. By campus level, a comparison of the percentage of beginning teacher in charter versus non-charter schools respectively were as followed: (a) elementary schools were 28% and 3%; (b) middle schools were 33% and 5%; and (c) high schools were 22% and 5%. Charter schools primarily attract beginning teachers and pay them very little, in part due to receiving little funding per student (Penning & Slate, 2011; Texas Association of School Boards, 2012; Wei et al., 2014). Researchers (Alliance for Excellent Education, 2004; Darling-Hammond, 2008; Greenlee & Brown, 2009; Martinez-Garcia & Slate, 2012) have indicated that statistically significant relationships are present between beginning teachers and low performing schools.

In light of the findings in this study, the high percentage of beginning teachers in Texas charter schools is congruent with prior studies in which researchers (Center for Research on Education Outcomes, 2009; Wei et al., 2014) indicated that charter schools, when compared to non-charter schools, did not perform as well. Additionally, low performing charter schools had a higher percentage of beginning teachers (Texas Association of School Boards, 2012; Wei et al., 2014) which aligns with the findings of this study. Further research into the extent to which the percentage of beginning teachers may correlate with low performing schools is warranted.

Recognition of the school characteristics that were determined to be highly discriminatory (i.e., percentage of beginning teachers, Black students, mobility rate, students in Disciplinary Alternative Education Programs, and students labeled as being At-risk) between charter and non-charter schools can allow administrators to be mindful when allocating proper resources and perhaps influence hiring practices. Addressing the deficiencies in staff development and support for new teachers may allow charter schools to improve their performance (Wei et al., 2014). A further analysis into how funding correlates with the low performance in charter schools is warranted in light of the fact that many low performing schools provided lower salaries as compared to non-charter schools (Texas Association of School Boards, 2012; Wei et al., 2014).

As with any empirical study, several limitations are present and need to be noted. First, our sample was limited to traditional schools (i.e., K-5, 6-8, & 9-12) excluding all other non-traditional schools. Second, data analyzed herein were limited to only the 2010-2011 school year. Third, accountability ratings were not considered in this study. As such, we recommend further research in which more years of statewide data were analyzed, as well as an examination of other variables such as accountability ratings. Until such time, we encourage readers to be cautious in the extent to which they make generalizations from our results.

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EXPLORING FAIRNESS AND JUSTICE: MEANINGS, RELATIONSHIPS AND VALUES

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Abstract: The study aimed to explore the meaning, identify the different values and relationship of fairness and justice among individuals on Filipino context. 120 college students at Philippine Normal University are randomly selected for this study. Equal numbers of participants are gathered in each year level and most of them are female. Fairness and Justice Questionnaire was developed by the researchers and administered. Participants were given areas such as family and school to anchor their answer when having difficulty. The study found that fairness is contextualized as social aspect and respondents' sight samples in family and school areas. Justice is contextualized as state that is weighing things in different perspective, focus on what is right or wrong and following laws and standards. Emerging values themes were constructed and they are similar in a way that they must have righteousness. Fairness is for simple things only but justice is for complex issues.

Keywords: *Fairness, Justice, Values, Meanings, Relationships, Fairness and Justice Questionnaire, College Students*

INTRODUCTION

Understanding the characteristics of the terms fairness and justice is more than just an academic exercise (Alvarado, 2012). In democratic society, court systems, judges, lawyers, as well as law enforcement, and even parents are consistently asked to ably provide both fairness and justice to society and its citizens. To know what these people are asking for, it is essential that psychologists and legal scholars, as well as legal actors commit to research investigating the layperson's understanding of these terms, as well as how they differ from that of the legal professionals. This first step is required to be able to even consider delivering on these requests, and whether it is even possible to deliver on both fairness and justice simultaneously if they might be discrepant (Alvarado, 2012).

Recent research in the broadly defined area of "justice" finds that increased levels of perceived procedural fairness (beliefs) and/or procedural justice can increase compliance (behaviors) with court orders (Makkai & Braithwaite, 1996; Kitzmann & Emery 1993). Other studies have shown that increased procedural fairness and outcome favorability can increase the perceived legitimacy of authority figures in the judgments of individuals (Van der Toorn, Tyler, & Jost, 2011), which may be of special interest to government agencies that deal with groups that feel disenfranchised with the criminal justice system.

Examining issues on fairness and justice would benefit the current elementary and secondary curriculum in such a way that the pupils or students be properly and effectively guided to follow path of righteousness (Tabasa, 1997). Increased feelings of justice and fairness among individuals appear to lead to many consequences that are considered beneficial by the above-cited authors. However, it is important to question what exactly is being increased when these feelings of either justice or fairness or both are being increased (Alvarado, 2012).

According to Alico (2007), the performances of employees are affected when they perceived that there is no fair treatment. It has always been talked about and argued that if organizational decisions and managerial actions are reckoned unfair or unjust, the affected persons experience feelings of indignation, anger and umbrage (Folger, 1987, 1993; Greenberg, 1990; Sheppard, Lewicki & Minton, 1992; Skarlicki & Folger, 1997).

Children must be equipped with desirable values, relevant knowledge and necessary skills that could be acquired through education. Rehabilitation activities should be instituted as an alternative source for learning values and manners (Dela Cruz, 2010). Scholar researchers such as Ladines (1991) and Ladrido (2008) emphasized how school must strengthen the guidance and counseling services to help the youth and to lessen the possibility of their becoming delinquent in the future. The foundations of the family relationships should be strengthened through community outreach and programs with the help of government agencies, non – government organizations and local government units. It seemed that the roles of concerned agencies are so defined that they know where to start and end (Dela Cruz, 2010). The community should be involved in law enforcement work so that the objectives and mission of the organization can be readily accomplished especially with regards to the maintenance of peace and order (Regalado, 1993).

Lawrence Kohlberg (1969) proposed that children form ways of thinking through their experiences which include understandings of moral concepts such as justice, rights, equality and human welfare. Knowledge about justice and fairness will be a great help in settling the barangay. According to Piaget, all development emerged from action; that is to say, individuals construct and reconstruct their knowledge of the world as a result of interactions with the environment.

The term justice and fairness is always defined in a broadly manner and simply relay on an area, it has no definite description on previous researches. Researchers would like to distinguish the meaning, relationship, values of the two terms among adolescents' perspective in the Philippines. This research is made to benefit the adolescents. The study aimed to determine if age, sex, location and family background has a contribution on adolescents perception of the terms fairness and justice.

REVIEW OF RELATED LITERATURE

FAIRNESS

Sheppard et al. (1992) defined fairness as the perception by a person that a decision, outcome, or procedure is both correct and balanced. Judgments of balance require the evaluator to compare a given action or outcome to the actions or outcomes of others (Adams 1965). Also, Jasso (1983), pointed out, what is fair at the individual level may not always be fair at the aggregate level.

Judgments of correctness involved a determination that an action or outcome is consistent, accurate, clear, and compatible with current values. The related studies showed that fairness is about right and equal decision made by an individual. It helped the researchers to have ideas regarding the concept of fairness.

According to Hansen (2012) when she wrote the Five Ways to Shape Ethical Decisions: Fairness Approach, it focused on the fair and equitable distribution of good and harm, and/or the social benefits and social costs, across the spectrum of society. It started with the premise that all equals should be treated equally, and those who are unequal due to relevant differences, should be treated differently in a manner that is fair and proportionate to, or commensurate with, their difference. Andre, Meyer, Shanks S.J. and Velasquez (2010) in their study entitled Thinking Ethically: A Framework for Moral Decision Making elaborated a principle "Treat people the same unless there are morally relevant differences between them". It had its roots in the teachings of the ancient Greek philosopher Aristotle, who said that "equals should be treated equally and unequally." The basic moral question in this approach is: How fair is an action? Does it treated everyone in the same way, or does it shown favoritism and discrimination?

The studies shown that favoritism gave benefits to some people without a justifiable reason for singling them out. Also, discrimination imposed burdens on people who are no different from those on whom burdens are not imposed. Both favoritism and discrimination are unjust and wrong. Fairness requires consistency in the way people are treated. As a result, the researchers gained ideas that fairness focuses on how fairly or unfairly our actions dealing with profit and burdens among the members of the group.

In recent research area of "justice" found that increased levels of perceived fairness and justice can increase compliance (behaviors) with court orders (Makkai and Braithwaite, 1996: Kitmann and Emery 1993). Other studies have shown that increased procedural fairness and outcome favorability can increase the perceived legitimacy of authority figure in the judgments of individuals (Van der Toorn, Tyler, and Jost, 2011).

This denoted that obedience on laws and apparent authority of judgment depends on the perceived concept of fairness of an individual. The adolescents' perception on fairness greatly influenced on how they make decisions and act accordingly in the society. If an individual had a good thought about fairness, then he or she became responsible in his or her behavior.

Unrealistic belief that the world is just, with individuals deciding what is based on the appropriateness of a situation. Learner defined appropriateness as judgments based on the learned concept what is 'fair and 'just'. His underlying definition of a just world is circular (Learner, M. J., 1980). In some so-called societies "culture of honor", the principle of an eye for an eye is widely endorsed (Figueredo, Tal, McNiel, and Guillen, 2004; Vidmar, 2001).

Based on the studies, it entailed on what is fair and just is subjective and be contingent on the prior knowledge or concept of a person, wherein culture and beliefs of a certain tribe or place would greatly affect the perception of fairness and justice.

According to Finkel (2001), it is much easier for an individual to remember instances of unfairness rather than fairness. If something is considered fair, it has occurred in the way things ought to be, and not exceptionally noteworthy. Auerbach (1983) stated: "Conception of justice that rest almost entirely upon legal procedure still trouble ordinary citizen who have difficulty defining justice but know injustice when they receive it."

When individuals felt that things have not occurred as they should, it went against the common belief in the 'just world' and people were more likely to remember it. It is difficult for an individual to define what justice is. However, perception of justice lies on the individual experience of it.

Philips (1997) referred to the centrality of fairness in this context: "Whenever persons or groups of persons voluntarily accept the benefits of a mutually beneficial scheme of co-operation requiring sacrifice or contribution on the parts of the participants and there exists the possibility of free-riding, obligations of fairness are created among the participants in the co-operative scheme in proportion to the benefits accepted". The perception of fairness is when they receive the outcomes that he or she deserved or was promised (Finkl, Kickul and Lester, 2002). Fairness heuristic theory (Lind, 2001; Van den Bos et al., 2001)

The concepts shown above pertained fairness in organizational setting. Fairness has risen through the given benefits received by an individual or a group. All members of the group must do their responsibilities in a task though they accept equal incentives. As a result, free – riding would be avoided and fairness is attained. Also being fair is a distinct characteristic and act as basis for others to trust a person. What is fair for one person is likely to suffice as fair for another. Recipients within a group are more likely to agree on distributions that do not reflect the bias of the distributor and that facilitate group cooperation. It also implied the understanding on how individuals made decisions that need to balance fairness and self – interest. Fairness is a construct that is being used to describe the procedures followed in the law, and justice is a legal construct that is being used to address the outcomes. It proposed that individuals care about fairness because it helped them deal with uncertainty about whether they can trust organizational authorities.

Over the past two decades, major conceptual advances have been made in identifying criteria that people use to make judgments about procedural fairness. Thibaut and Walker's (1975) seminal work in this area emphasized judgments of control over both process and outcomes. According to their instrumental control theory, process control refers to a person's control over the presentation of information or evidence to the decision maker whereas decision control refers to control over the actual decision made. Guided by their instrumental model, Thibaut and Walker (1975) reported that, in the course of resolving legal disputes, people often care as much or more about how they are treated as they do about the outcome of the dispute. Later, Leventhal (1980) proposed a more comprehensive set of criteria for evaluating procedural fairness and moved beyond control dimensions to include representation, consistency, impartiality, accuracy, correctibility, and ethicality. Representation, or having "voice," means that all phases of the process must reflect the basic concerns, values, and outlooks of important subgroups in the population of individuals affected by the decision making process. In the context of family decision making, this might be demonstrated by parents who give their children the opportunity to express their side during the give and take of conflict resolution. Consistency means that decision-making procedures are relatively invariable across persons and over time. For example, parents who use the same standards to evaluate the actions, performance, or behavior of different children or the same child from one occasion to another would be regarded as consistent.

Impartiality means that parents create a level playing field by demonstrating even-handed treatment, honesty, and lack of bias. Accuracy requires ensuring that decision making is based on optimal levels of reliable information and an informed opinion. For example, parents who obtain all of the information that they needed to make an informed choice before taking action are likely to be perceived as having made more accurate or "correct" decisions. Correctibility is synonymous with "appeal" or "reconsideration" and is based on the existence of opportunities to modify and reverse decisions made at various points in the decision-making process. For example, parents may allow adolescents an opportunity to have the decision reconsidered. Finally, ethicality requires treating individuals in ways that are compatible with the fundamental moral and ethical values accepted by those individuals ± in essence, treating persons such as adolescents with human dignity and respect Fondacaro & Jackson (1999).

This implies that in order to achieve one's fairness in a certain thing, there are several processes or steps that must do. Based on the related studies, fairness is not obtained easily. The researchers have concrete ideas that fairness takes time and effort before they experience and achieve it.

JUSTICE

The study of justice has been a topic in ethics and philosophy at least since Plato and Socrates, and philosophical and ethical thinking about justice has shaped the way people see the world. Mankind has long tried to answer the question, "what is justice?" Yet the question seems to remain as open ever, and it seems unsure if a final answer can ever be found. Justice has been conceptualized in many different ways by philosophers and thinkers: as a natural law based on contracts, as an instrument for societal order for which no universal standard exists, as a consequence of the economic system that is used as a manipulative instrument to preserve and justify a societal order, or as a result of historical associations and historical rights (Fellenz & Fortin, 2007). In philosophy, justice has been thought about as an attribute of societal order, as a human virtue, or as an attribute of an act (Kelsen, 2000). Although the two words are distinct, U.S. legal scholars and philosophers often use the terms interchangeably (Finkel, 2001). For example, in Lerner's (1980) well-known book on conceptions of justice, *The Belief in a Just World: A Fundamental Delusion*, the author states that people in Western society share a fundamental, yet unrealistic belief that the world is just, with individuals deciding what is just based on the "appropriateness" (p. 11) of a situation. John Rawls, an eminent philosopher, further complicates the issue by defining fairness as a distinct subset of the overall concept of justice, thereby making the terms related, but separate (Rawls, 2001; 1971).

The related researches shown above indicate that justice is fairness in the way that people treated. It helped the researches to know how justice will conceptualize as part of decision – making process of an individual. This implies that appropriateness as judgments is based on the learned societal concepts such as what is "fair" and "just", his underlying definition of a "just world" is circular.

According to Ouchi (1980), the attempt to achieve the perception of equity (fairness in exchange outcomes) creates transaction costs. Social psychologists (Deutsch 1975, Reis 1986) similarly argue that justice should foster social cooperation and promote mutually agreeable exchanges. Another is that, philosophers (Barry 1989, Rawls 1971) and social psychologists (Frohlich & Oppenheimer 1992, Leventhal et al. 1980) draw attention to the importance of impartiality for discerning just distributions.

Based on the related researches any activity which is engaged in to satisfy each party to an exchange that the value given and received is in accord with his or her expectations, these activities are necessary to create a perception of equity among all parties to a transaction. If a group's expectation parallel to the existing output and their effort or action, justice will occur. In addition, justice rises when expected result based on established particular rule of behavior in the society collaborates with the achieved outcomes.

Tom Tyler (1989, 1994) has conceptualized procedural justice in terms of the relationships among decision makers and participants in the decision-making process. For example, Tyler (1994) has suggested that people evaluate the procedural fairness of interactions with others along relational dimensions such as neutrality, trust, and standing. Neutrality involves impartial, even handed treatment and would be exemplified in the family context by parents who use impartial procedures with all members of the family. Trust refers to whether individuals have faith in the good intentions of others, typically authority figures. In the context of family decision making, this would be characterized by an adolescent who had faith in the benevolence of his or her parents. Standing refers to whether an authority figure treats a person as a valued member of a relevant group, for instance, parents who treat their child as a valued member of the family. This identity-based, relational model proposed by Tyler and his associates is based

on a substantial foundation of empirical research demonstrating that people seem to care about relational issues such as being treated with dignity and respect and having their position heard whether or not their expressions have any influence on decision outcomes (Lind & Tyler 1988). Recently, Tyler, DeGoey, and Smith (1996) confirmed that, in the context of families, relational judgments of fairness along dimensions of neutrality, trust, and standing were related to adolescent self-esteem, and these relationships were mediated by respect within the family, and family pride.

According to Erickson (1988) justice perceptions are not formed in isolation; rather, they are subject to the influence of those with whom we interact. People interact regularly with each other are more likely to have similar perceptions on justice. Folger and Kass (2000) how the perception on justice of others influence an individual's own perception.

This implies that interaction with other truly affect their own concept about justice. People have different views regarding that matter, it's just that they share and compare their ideas in order to develop own definition of justice. Justice also helped the researchers in knowing their perceptions and how it affects their moral decision – making.

Many different kinds of things are said to be just and unjust: not only laws, institutions, and social systems, but also particular actions of many kinds, including decisions, judgments, and imputations. Fairness and justice held and applied independently but which are often brought together in a particular context of processes such as ordering and prioritizing (Rawls, 1971). The two words are used independently according to the specific and present conditions. However, consulting standard dictionaries and thesauri makes it clear that at the level of common usage, there is so much overlap when they attempt to differentiate the words in individually.

Fairness is under the term justice. In order to conclude that there is justice; one should first perceive and become aware if there is an equity or fairness happening. The idea of fairness is more on individual's comparison of the received benefits to the achievement of others in a particular group. While, justice develops when common good exist in wider population or in the society. The theory of justice as fairness denies that individuals should receive a greater or lesser share of basic rights and duties because of their personal achievements or because of their personal contributions to society. So justice might be fulfilled by a social equality.

A child already knows the concept of fairness through their own experience. While the youth have views on justice as social agreements between people and are intend to promote the common good. The concept of morality comes within an individual's perception through the internalized experiences.

METHODOLOGY

Description of the Study Site

This research was conducted on Philippine Normal University – Manila. Established in 1901 by the Americans, it was originally an institution for the training of the teachers. It is located in the Ermita District. Situated in Manila's premier civic center, where the Manila City Hall, Rizal Park and National Museum of the Philippines are also located.

Respondents

The participants in this study were students studying at the Philippine Normal University – Manila during the Academic Year 2012 – 2013. A total of 120 students coming from the four year levels were selected. 19 (15.83%) of the students were male, 98 (81.67%) were female, while the 3 remaining students were unknown. All students who took part in the study were chosen through stratified random sampling.

Instruments Used

The main instrument used by the researchers was a questionnaire to determine how adolescents' contextualized fairness and justice, its relationships and associated themes. For fairness and justice, researchers conducted survey through questionnaire that were composed of 6 questions to convey the perceptions of adolescents on fairness and justice questions and at the same time share their experiences that show fairness and justice. The participants' answers would be gathered and transcribed.

Data Gathering Procedure

Initially, the proponents gathered related researches and information that gave direction on this study. The

researchers conducted a pre-survey about fairness and justice, its meanings, relationships and values. The pre-survey was conducted through Online Questionnaire (Google docs) to random respondents. The data gathered on the online questionnaire were analyzed and the researchers also created Meta cards given to some freshmen students of Philippine Normal University for the validation of the online results. All of the gathered data were analyzed and encoded for the preparation of the final questionnaire.

The researchers conducted the questionnaire to the students of Philippine Normal University – Manila. When the data were all collected, thematic analysis, data interpretation and peer evaluation were done. According to Gibson (2006), thematic analysis is an approach dealing with data that involves the creation and application of codes to the data. The data being analyzed might take any number of forms like interview transcripts, field notes, policy documents, photographs and video footages. It used in order to formalize the identification and development of themes (Harden, 2007).

FINDINGS

It shows that majority of the respondents are within the range of 16 to 20 years of age with a percentage distribution of 92.5%. The least from the age scale is 21 to 25 years of age with a percentage distribution of 5%. There were three (3) respondents who did not indicate their age, with the percentage distribution of 2.5%. In terms of sex, majority of the respondents are female with a percentage distribution of 81.67%. The least number of respondents are Male with a percentage distribution of 15.83%. There were three (3) respondents who did not indicate their sex, with the percentage distribution of 2.5%. The participants came from different year levels. Equal numbers per year level were gathered. 25 % per year level participated in this study. Most of the participants were Psychology majors with the 35% of the total population. Even though, the respondents came from various courses, they still have the same contextualization on what fairness and justice are.

There were themes created which contextualized fairness. The respondents said that fairness is *pagkakapantay-pantay*, *karapatan*, *may proseso*, *may pinanggagalingan*, *malawak na isip*, *may relasyon*, subjective, guiding principle, fairness is equal to justice, degree and fairness under justice.

There were themes created which contextualized justice. The respondents said that justice is *may proseso*, *may pinanggagalingan*, *tunguhin*, *pagpapahalaga sa pakikipagkapwa/karapatan*, *pagkakapantay-pantay* and guiding principle.

Fairness and justice came from the concept of *pagkakapantay-pantay*. Also, fairness and justice possess decisions based on standards of humanity but justice rely more on the law. Two terms must have righteousness where two parties which are involved should benefit. There are always consequences but in fairness the consequence is the view of others towards a person while the consequence of justice is penalty.

Fairness is considered as simpler or shallow than justice. Fairness is for simple things only but justice is for complex issues. They both had consequences however; it varies on the level of cost given. Fairness and Justice had similar theme of values they are as follows: *positibo ng pananaw*, *pagkamaunawain*, *pagkapantay-pantay*, *pagkamapagmahal*, *pagkamakatao*, *pagkamasiyasat at pagkamatapat*.

CONCLUSION

As the result of this study, fairness is contextualized as social aspect and some of the respondents' sight samples in family and school areas. In family aspect, there was equal love, care and support to all members of the family and no favoritism. While in school, fairness is giving grades equally and also having an equal treatment and giving punishment to those who are involve. Also, fairness includes morality and standard of the inner state, also it involves decision making. It includes as being equal regardless of socioeconomic status, respect the each other and recognize the rights of individual. Both male and female agreed that fairness is getting what you deserve and also giving consideration to others.

On the other hand Justice is contextualized as state that it is weighing things in different perspective, focus on what is right or wrong, following laws and certain standards. It is also the quality of being fair in the aspect of judgment. Responsibility that individual must have and give importance to. Justice is more on decision making processes; it talks about rights which stated on the law and having equal judgment on what they did whether it was good or bad.

Justice is defined as making decisions without no biases and one of the elements of the society which is related to law. In addition, participants said that it is a respect of the equal rights, giving right decisions based on their perspectives, knowing the concept of what is right or wrong and state of equilibrium. Males and females both contextualized justice as means of giving judgment, getting what you deserved and following rules related to the law.

Fairness and Justice is similar in a way that they must have righteousness where two parties which are involved should benefit. There are always consequences but in fairness the consequence is the view of others towards a person while the consequence of justice is penalty. Fairness is considered as simpler or shallow than justice. Fairness is for simple things only but justice is for complex issues. They both had consequences however; it varies on the level of cost given.

Respondents answered values pertaining to fairness and justice however, two terms had similar theme of values. The following are: *positibo ng pananaw, pagkamaunawain, pagkapantay-pantay, pagkamapagmahal, pagkamakatao, pagkamasiyasat at pagkamatapat*. Respondents were able to categorize values under fairness and themes are more structure. On the other hand, it was not easy for the participants to give certain values that were anchored on justice and themes are more likely dispersed.

Theory of John Rawls supports this present study because it is indicated that justice is to be understood as fairness. Rawls argues that all that is required for a society to be just is for it to be fair. A just society is one which has institutions which protect individual rights and liberties of all citizens and has a pattern of distribution of resources (Schneider, 2005). However, some of the findings were not supported by his theory in which justice is an attribute of society and not individuals. Based on the research findings, both society and individuals were considered in contextualizing the meaning of justice. According to Rawls, a just society will be a society which is based upon principles. The principles are the best formulation of a social system which is not based upon personal interests or specific moral doctrines. Based on the findings formulated, there were principles needed to construct the meaning of justice which involves personal perspective. There were moral values obtain in both fairness and justice.

RECOMMENDATION

For the future researches, the researchers are recommended the following:

1. Greater number of respondents with equal number or distribution of males and females.
2. Explore the meaning, relationship and values of fairness and justice in various age groups.

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FACILITATING THE MORAL DEVELOPMENT OF FUTURE ACCOUNTANTS: A MALAYSIAN EXAMPLE

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Abstract: Two decades of financial scandals have seriously damaged the credibility of accountants as guardians of financial information. To repair this credibility, the Malaysian government released a blueprint that mandated Malaysian educational institutions to produce morally competent professionals. This study sought to assist the accounting department at the Universiti Sains Islam Malaysia (USIM) in achieving this mandate by evaluating the moral competencies of second-year students using an instrument developed by a collaboration with Islamic accounting scholars. The results revealed that the current second-year accounting students at USIM possessed below par levels of moral competencies in dealing with ethical dilemmas in an accounting context. The implication of these results is that USIM's accounting department has to critically assess the ethical content of its curriculum in order to ensure that it is capable of developing the moral competencies of these students to an excellent level. Additionally, there is a need for USIM to institutionalize the measurement of students' moral competencies so that an objective determination can be made as to how effective the department is in developing the moral competencies of its students.

Keywords: Moral competence; Accounting students; University education; Islamic perspective; Ethics education

INTRODUCTION

In the earliest part of the twenty-first century, the world was rocked by several financial scandals; from Enron to WorldCom; Tyco to Parmalat; Arthur Andersen to Shell, and more recently, the global financial crisis (Bayou et al., 2011); these scandals directed the world's attention towards the seemingly ever-growing moral malaise amongst accountants and business people.

The concern about the rampant increase in immoral practices of accountants and business people was not restricted only to America and Europe; there was also concern in Malaysia. Abu Bakar et al. (2010) explained that as early as the 1980s, public confidence in the Malaysian accounting profession took a battering due to collapse of organizations like Bank Bumiputra and Pan-Electric. In the 90s, there was a very noticeable increase in white-collar crimes involving accounting companies, some of which were sued by their clients such as Johari Abas, and Anor, David Low See Keat and Orsants (Abu Bakar et al., 2010). In recent times, concern has grown in the society regarding the alarming increase in the unethical and immoral practices amongst managers in Malaysia (Abu Bakar et al., 2010; Yunus and Abdul Rashid, 2011; Eid, 2012).

In order to address this alarming increase in unethical and immoral behaviours among business people in Malaysia, the government focused on the educational sector as a viable mechanism. This is evidenced by a 2012 blueprint to overhaul the Malaysian educational system within thirteen years (Malaysia Education Blueprint 2013-2025, 2012). This blueprint had eleven key objectives, one of which was directly targeted to the issue of moral competence amongst young Malaysians, and was stated as follows: "Every student leaves school as a global citizen imbued with core, universal values and a strong Malaysian identity. The values they have learnt are applied in their day to day lives, leading to more civic behaviour such as an increase in volunteerism; a willingness to embrace peoples of other nationalities, religions and ethnicities; and a reduction in corruption and crime. Every student also leaves school prepared to act as a leader, whether in their own lives and families, or as part of the broader community and nation" (Malaysia Education Blueprint 2013-2025, 2012, p34). The Malaysian government's message to all educational institutions in Malaysia regarding moral competence is clear: Produce students who have excellent moral values and ethics.

This paper sought to assist the accounting department at the Universiti Sains Islam Malaysia (USIM) in achieving this crucial mandate. This was achieved by measuring the moral competencies of second-year accounting students at USIM in an accounting context, and identifying areas of weaknesses which the department could fully address, so that these students would graduate ready to deal with the inevitable moral

dilemmas in the professional work place. The accounting students enrolled at USIM are Muslim, and with 61.3% of the Malaysian population being Muslims, they represent a sample of the majority of the next generation of Malaysian accountants.

The rest of the paper proceeds as follows: Firstly, the research paradigm adopted in this paper is described. This is followed by a review of the scholarship on the relationship between university education and moral competence. This paper's conceptual framework is then presented, followed by the research methodology adopted. The findings of the paper along with a discussion of their implications follow, and finally, the paper ends with a conclusion.

RESEARCH PARADIGM

For Muslims, Islam represents a complete way of life. What this implies is that *every* aspect of a Muslim's life, *including the conducting of research*, is guided by the principles of Islam as embodied in its two primary sources of guidance, The Noble Quran and the *Sunnah* (teachings, deeds, sayings, and silent permissions of the Noble Prophet Muhammad [peace be upon him, PBUH]). The *Sunnah* is found in narrations by the companions of the Prophet Muhammad (PBUH) called *Ahadith* (plural of *hadith*).

The implication of adopting this paradigm in conducting research is that all concepts identified in a study are defined in accordance with Islam's primary sources of guidance, rather than adopting conventional definitions of these concepts. Additionally, the expected relationships between these concepts are also derived from the Quran and *Sunnah*. This study embraces this paradigm and this is particularly appropriate as the focus of the study is on moral competence of *Muslim* accounting students, and this concept can only be fully understood by referring to the *source* of all Muslim morality, the Quran and *Sunnah*. In order to shed more light on some verses of the Quran and *Ahadith*, commentaries by renowned Islamic scholars are also relied upon.

LITERATURE REVIEW: UNIVERSITY EDUCATION AND MORAL COMPETENCE

The papers reviewed were concerned with the relationship between various aspects of education and the development of the moral competence. Specifically there were three key concerns: 1) The impact of education in general on moral competence, 2) The impact of "ethics" education on moral competence, and 3) A description of the "optimum" content of ethics education. An overview of each of these concerns is provided below. Additionally, the Islamic position on the role of education in moral competence development is also provided.

1: The impact of education on moral competence

Swiss psychologist and philosopher, Jean Piaget was arguably one of the most influential proponents of the importance of education in the moral development of individual, particularly those of children (Rest, 1989). In his 1932 seminal work entitled "The Moral Judgment of the Child", he sought to investigate the moral developmental process of children by interviewing a large number of children from various schools in the Swiss towns of Geneva and Neuchatel. The results of these interviews led to the postulation of a theory of child moral development that consisted of four developmental stages: The first stage was called sensorimotor stage; at this stage, children from birth to age two were focused only on themselves and were incapable of considering the welfare of others. At the USIM stage called the preoperational stage, children ages two to seven are still predominantly concerned only about themselves, but begin to develop an understanding of the welfare of others as well. The concrete operational stage follows whereby children aged seven to eleven became more logical in their thinking, and were no longer concerned only about themselves. At the fourth and final stage (formal operational stage), children from eleven and older were now able to think in abstract and holistic terms regarding issues of morality. Piaget (1932) concluded that children's morality is shaped by what they observe, and thus educational institutions have a critical role to play in their moral development by providing an interactive learning environment.

Lawrence Kohlberg, an American psychologist, is perhaps even more famous than Piaget for his contribution to the understanding of the important role of education in the development of moral competencies. In his 1958 PhD Dissertation obtained at the University of Chicago entitled, "The Development of Modes of Moral Thinking and Choice in the years 10 to 16", Kohlberg built upon the work done by Piaget (1932). Kohlberg (1958) argued that the main goal of education should be moral development. He sought to assess the impact of education on the moral development of children of ages 10-16 by assessing their responses to various

moral dilemmas. The major fruit of his research was the postulation of the now very famous “stages of moral development”. Kohlberg’s (1958) theory of moral development identified six stages of moral development, classified under three levels, each level containing two stages. The first level is called the pre-conventional level containing stages 1 and 2; at stage 1, a child acts morally so as to avoid punishment, while at stage 2, he or she acts morally to earn a reward. The next level is the conventional level containing stages 3 and 4; at stage 3, a child acts in a way that is accepted by society, and at stage 4 a child obeys the established laws of the land. The final level is the post-conventional level containing stages 5 and 6; at stage 5, a child chooses actions that will benefit the majority (this is similar to the utilitarian rule of ethics), and at stage 6, a child acts based on universal principles.

Rest (1986), a well-known American moral psychologist, followed in the footsteps of his mentor, Kohlberg, by theorizing that if educators were to effectively enhance the moral development of students, they had to understand the psychological processes that needed to take place for moral action to occur. He developed a four-component model of ethical behaviour to explain these processes. The first component was moral sensitivity which is the recognition of the existence of an ethical problem; the second component was moral judgment which is making a determination of the right course of action to take in that specific ethical context; the third component, moral motivation refers to the strength of an individual’s conviction to actually follow through with the right course of action identified through his moral judgment, and the fourth component, moral character represents the actual implementation of the chosen course of action. Rest (1986) argued that by understanding these four components, educators could develop ethics curricula that would enhance each of these components, and thus improve the moral competencies of students.

After these landmark pieces of scholarship by Piaget (1932), Kohlberg (1958) and Rest (1986), several studies have sought to empirically test the role of a university education on the moral competencies of students. A majority of these studies, Chafi's (2013) and Özdemir et al.'s (2015) studies being the only dissenting voices, provided evidence to support the assertion that education, regardless of the level, has a positive impact in developing students' moral competencies (Liaquat et al., n.d., Al-Ansari, 2002; Schillinger, 2006; Thomas, 2012; Clipa and Iorga, 2013; Doyle and O’Flaherty, 2013). Moral development was more pronounced in students of the humanities than those involved in technical disciplines (Lofstrom, 2012; Lajciakova, 2013).

2: The impact of “ethics” education on moral competence

Unlike studies in the section above that focused on the impact of education in general on moral competence, those reviewed in this section focused on determining the impact of ethics education, be it a stand-alone ethics course or integrated ethics coverage within the curriculum, on the moral competencies of students. A review of these studies revealed that the results were mixed, with some studies finding a positive relationship between ethics education and moral competence (Sullivan, 2004; Dellaportas, 2006; Abdolmohammadi & Baker, 2007; Bosco et al., 2010; Saat et al., 2010; Pleban et al., 2011; Holmes et al., 2012), and others finding no significant relationship between these two concepts (Altmyer et al, 2011; Chaganti, 2012; Padia & Maroun, 2012; May & Luth, 2013; Self et al., 2013).

3: The “optimum” content of ethics education

Despite mixed results regarding the effectiveness of ethics education in improving students’ moral competence as evidenced by the studies reviewed in the previous section, papers reviewed in this section all had the basic assumption that ethics education was indeed effective in improving moral competence. Their concern was in “optimum” content for effective ethics education. Three distinct suggestions by scholars were observed; the first group advocated discipline-specific dilemmas as optimum (Titus et al., 2011; Schmidt et al., 2013). The USIM group advocated inclusion of “emotion laden” scenarios (Fontaine et al., 2012; Thiel et al., 2013; Grezo & Pilarik, 2013), while the third group advocated a combination of the “Socratic Method” and “Reflective Teaching” (Wortel and Bosch, 2011; Kavathatzopoulous, 2012; Montgomery & Walker, 2012; Kwok & Selman, 2013). A brief discussion of each of these groups follows in the subsequent paragraphs.

The first group that advocated discipline-specific scenarios argued that the Rest's Defining Issues Test, which is the most commonly utilized instrument in moral competence scholarship, was too abstract and did not capture the realities of the dilemmas faced by specific professions. Each profession had to develop ethical scenarios that mirrored those that would actually be faced by their practitioners in the work environment.

The second group of scholars argued that ethical scenarios that evoked an emotional response from students would be most effective for enhancing students’ moral competence. Fictional stories full of strong emotional cues and visuals would provide students with a wider and more enjoyable experience of ethical issues.

The third group advocated a combination of the “Socratic Method” and “Reflective Teaching”. The “Socratic Method” is based on the work of renowned Greek philosopher Socrates and states that the best way to acquire knowledge and insight is through dialogue (Wortel and Bosch, 2011). “Reflective teaching” occurs when students are taught that resolving moral dilemmas is not limited to the use of logic alone, but to the use of one’s internal belief system as well (Montgomery and Walker, 2012).

4. Islamic position on the relationship between education and moral competence

From an Islamic perspective, the relationship between education and moral competence is a pivotal one. This is evidenced by the fact that the first revealed verses of the Noble Qur’an emphasize this relationship as follows: **Read in the name of your Lord who created. He created man from a clot. Read and your Lord is Most Honorable. Who taught to write with the pen. Taught man what he knew not (al-Alaq: 1-5).** In addition, the Noble Prophet Muhammad (PBUH) also emphasized the importance of seeking knowledge in the following *hadith* narrated by Abu Hurairah, **“I heard the Messenger of Allah (PBUH) saying: ‘This world is cursed and what is in it is cursed, except the remembrance of Allah (dhikr) and what is conducive to that, or one who has knowledge or who acquires knowledge.’”** (Sunan Ibn Majah, Vol. 1, Book 37, *Hadith* 4112).

In Islam, there is no distinction between education and ethics education. All courses of study must be done “in the name of Allah”. Additionally, regarding the optimum content of education, Muslims are required only to seek beneficial knowledge which brings them closer to Allah. The Prophet (PBUH) informs of this fact in the following *hadith* narrated by Jabir, **the Messenger of Allah said: ‘Ask Allah for beneficial knowledge and seek refuge with Allah from knowledge that is of no benefit.’** (Sunan Ibn Majah, Book 34, *Hadith* 17).

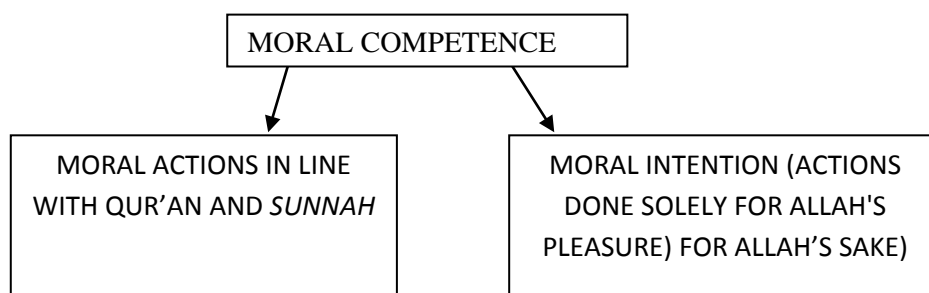
The ultimate objective of seeking knowledge in Islam is to develop the fear of Allah and thus worship Him as He ought to be worshipped. Allah informs us of this in the 28th verse of *Surah Fatir* as follows: **And among people and moving creatures and grazing livestock are various colours similarly. Only those fear Allah, from among His servants, who have knowledge. Indeed, Allah is Exalted in Might and Forgiving.**

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

In this study, a morally competent Muslim accountant was defined as **one who has the ability to make moral decisions in line with the commands of Allah in the Noble Qur’an, and in accordance with the Sunnah of the Noble Prophet Muhammad (PBUH), in discharging his or her duties as an accountant.**

In Islam, this concept of moral competence is made up of two separate but interdependent parts: 1) knowing the right thing to do (moral action), and 2) doing the right thing for Allah’s sake alone (moral intention). In the sight of Almighty Allah, a moral action is only acceptable if the moral intention is solely for His pleasure. The Blessed Prophet Muhammad (PBUH) explains this very important point in the famous *hadith* narrated by Umar bin Al-Khattab: **The Messenger of Allah (PBUH) said, “The deeds are considered by the intentions, and a person will get the reward according to his intention. So whoever emigrated for Allah and His Messenger, his emigration will be for Allah and His Messenger; and whoever emigrated for worldly benefits or for a woman to marry, his emigration would be for what he emigrated for”** (Riyad as-Salihin, Book 1, *Hadith* 1). This is a very crucial concept which this study took into consideration when assessing the moral competencies of Malaysia’s future Muslim accountants which are represented by second-year accounting students enrolled at USIM. Figure 1 below illustrates the above mentioned conceptualization of moral competence.

Figure 1: Conceptualization of Moral Competence



RESEARCH METHODOLOGY

This section of the paper present the study's research design and methodology. Firstly, an overview of USIM is provided, with particular emphasis on the accounting department from which the students that participated in the study belong to. Secondly, the steps followed to develop a profile of a morally competent Muslim accountant are presented. Thirdly, the steps followed to develop the instrument to measure the moral competencies of Muslim accounting students is presented. Finally, the actual procedure adopted for measuring the moral competencies of the specified students is discussed.

An overview of the Universiti Sains Islam Malaysia (USIM)

USIM was approved by the Malaysian cabinet on 11th June, 1997, and officially opened on 13th March, 1998. USIM adopts the philosophy that Islamic principles should serve as the foundation of all academic knowledge and has as its mission the utilization of the latest technologies and innovation to improve the lives of the Muslim *ummah* (brotherhood). USIM currently has 8 faculties and 4 centres of excellence. Of particular interest to this study is USIM's Bachelor of Accounting with Honours department which is in the process of securing Malaysian Institute of Accounting (MIA) accreditation and according to USIM is based entirely on Islamic teachings (Universiti Sains Islam Malaysia, 2014).

At the time this study, USIM department of accounting had 10 academic staff and 454 undergraduate students enrolled. First-year students are all required to take general courses. They only select their major in their second year of study. This is why this study focused on second-year students in its sample.

Developing the Profile of the morally competent Muslim accountant

This section described the process adopted in order to develop the profile of a morally competent Muslim accountant. The profile was developed from the perspective of the Muslim accounting graduate, and was divided into two components: 1) Finding the "right" job, and 2) Following an Islamic "code of conduct". A discussion of these two components is presented below

1: Finding the "right" job

Nu'man b. Bashir (Allah be pleased with him) reported: I heard Allah's Messenger (PBUH) as having said this (and Nu'man) pointed towards his ears with his fingers): What is lawful is evident and what is unlawful is evident, and in between them are the things doubtful which many people do not know. So he who guards against doubtful things keeps his religion and honour blameless, and he who indulges in doubtful things indulges in fact in unlawful things, just as a shepherd who pastures his animals round a preserve will soon pasture them in it. Beware, every king has a preserve, and the things God has declared unlawful are His preserves. Beware, in the body there is a piece of flesh; if it is sound, the whole body is sound and if it is corrupt the whole body is corrupt, and hearken it is the heart (Sahih Muslim 1599a, Book 22, Hadith 133).

For the Muslim accounting graduate, the first challenge that faces him or her is finding the "right" job. The "right" job is one where all activities are in line with the Qur'an and *Sunnah*. As the *hadith* above teaches us, the permissible jobs are clear and the prohibited jobs are clear, and the morally competent Muslim accountant must be able to make this distinction. The permissible activities are numerous in number, and thus the Muslim accountant has many options. **Say, "My Lord has only forbidden immoralities - what is apparent of them and what is concealed - and sin, and oppression without right, and that you associate with Allah that for which He has not sent down authority, and that you say about Allah that which you do not know" (Al-Araf: 33).** However, there are certain kinds of jobs the Muslim accountant has to avoid because the activities that they engage in are incompatible with the commands of Almighty Allah. **...And cooperate in righteousness and piety, but do not cooperate in sin and aggression. And fear Allah; indeed, Allah is severe in penalty (Al-Maeda: 2).** Some of the most commonly known *haram* activities include i) dealing in interest, ii) gambling, and iii) dealing with intoxicants.

After securing a job at an Allah-approved organization, the next concern for the morally competent Muslim accountant is to fulfil his or her duties in accordance with the commands of Almighty Allah. This "Code of Conduct" represented the USIM component of the profile.

2: Following an Islamic Code of Conduct

As mentioned already in previous parts of this study, every act of a morally competent Muslim must be done with the objective of earning the pleasure of The Most Gracious Allah. A Muslim accountant must thus keep this critical objective in mind whilst discharging his or her duties as an accountant. The objective of this component of the profile was to develop a comprehensive Islamic code of conduct that includes all the qualities that a morally Muslim accountant must display in order to please his Creator. In order to develop this code of conduct for Muslim accountants, the study adopted a two-pronged approach.

The first prong was to adopt the code of conduct for Muslim accountants developed by the Accounting and Audit Organization for Islamic Financial Institutions (AAOIFI) as a foundation for this component of the profile. AAOIFI's code of conduct for Muslim accountants was published in 1991 and is derived from the Noble Qur'an and *Sunnah*; this made it an excellent starting point. AAOIFI's code of conduct contains five ethical principles described below:

1. Trustworthiness: The Muslim accountant should be straightforward and honest whilst discharging his duties, and must never present untruthful information.
2. Objectivity: The Muslim accountant should be fair, impartial and free from any conflict of interest.
3. Professional competence and diligence: The Muslim accountant must possess the requisite skill necessary to successfully discharge his duties.
4. Confidentiality: The Muslim accountant must never divulge information obtained about an organization during the course of discharging his or her duties without permission unless he or she is legally or professionally obliged to do so.
5. Professional conduct and technical standards: The Muslim accountant must observe the rules of professional conduct and obey the accounting and auditing standards of *Shariah*-compliant organizations.

The USIM prong was to **interview** and consult extensively with five Islamic scholars well versed in the Qur'an and *Sunnah*, particularly in the areas of "Islamic accounting" as well as "*Fiqh* Mu'amalat" (Laws of Islamic business transactions). These consultations established the content validity of AAOIFI's code of conduct. In addition to the five qualities listed by AAOIFI's code of conduct, the scholars suggested that three more qualities be added under the umbrella of "Faith-Driven" conduct, which are unique to the Muslim accountant. These qualities included 1) Avoiding interest, 2) Avoiding gambling, and 3) Avoiding physical contact with the opposite sex (*non-mahram*).

In total the developed profile of the ideal Muslim accountant had nine key qualities listed below:

- 1) Finding the right job
- 2) Trustworthiness
- 3) Objectivity
- 4) Professional competence and diligence
- 5) Confidentiality
- 6) Professional conduct and technical standards
- 7) Avoiding interest
- 8) Avoiding gambling
- 9) Avoiding physical contact with the opposite sex.

After the development of the two-component profile of a morally competent Muslim accountant was completed, the next step was to develop an instrument capable of effectively measuring the nine qualities contained in the profile

Developing the Muslim Accountant Moral Competency Test (MAMOC)

A collaborative effort by the researchers and the five Islamic accounting and *Fiqh* Mu'amalat scholars resulted in the development of nine interrelated ethical scenarios to measure each of the nine qualities of a morally competent Muslim accountant highlighted above. The instrument thus developed was called "The Muslim Accountant Moral Competency Test" or "MAMOC".

MAMOC had a title and three main sections: The instrument was titled "Understanding the Career Aspirations and Work-Related Decisions of Future Accountants". In order to minimize social desirability bias amongst the respondents, the study's objective was disguised by giving the instrument this neutral heading without any obvious moral overtones. The first section was a demographic section with ten items (Age, Religion, Gender, Nationality, "How often do you pray daily?", "How important is religion in your family?", Year of study, Type of secondary school attended, "How often do you visit your place of worship?" and CGPA). The USIM section was titled "Choosing your dream job". Here, the respondents were given a choice of five job offers

from companies in different industries. Each job offer had a company description, a job description and an annual salary. This section sought to determine if the Muslim accounting students knew what the right job was from an Islamic perspective. To test this important aspect of the students' moral competencies, all the jobs offered were unacceptable from an Islamic perspective; it was expected that the morally competent student would recognize this, and consequently reject all job offers on the basis of their unacceptability Islamically. The third section was titled "Living your dream job", and contained eight ethical scenarios, with each scenario testing each of the eight qualities of a morally competent accountant mentioned earlier [1) Trustworthiness 2) Objectivity 3) Professional competence and diligence 4) Confidentiality 5) Professional conduct and technical standards 6) Avoiding interest 7) Avoiding gambling 8) Avoiding physical contact with the opposite sex]. The protagonist in the scenarios was a friend of the respondent, and the respondent was required to resolve the ethical dilemmas by advising his or her friend on what to do. The scenarios were structured in this way with the hope that respondents would be more honest in their answers if they were placed in an advisory capacity, rather than as the main actors in the scenarios. To conclude the instrument, the students were asked whether they would remain with the company after all the experiences contained in the previous scenarios.

The ethical scenarios contained in the instrument were then resolved by the scholars based on evidence from the Qur'an and *Sunnah*. Their solution served as the model answer to each scenario, and also served as a scoring guide for determining the moral competencies of the students surveyed.

A pilot study was carried out using the newly developed instrument to assess whether respondents would understand the instructions, terminology and content of the questionnaire. Additionally, the pilot study enabled the researcher to ascertain the reliability of the scoring system developed by the Islamic scholars. First-year Muslim students from the Economics and Management Faculty at USIM were used to conduct the pilot study. These students were enrolled in four different sections of a Financial Accounting Fundamentals class, and were selected because they closely resembled the students selected for the actual study, second-year Muslim accounting students. 100 questionnaires were distributed, and the students were asked to carefully go through the questionnaire and ask any questions they might have as to its content. All the students stated that they clearly understood how to fill the questionnaires. The students were then told to take the questionnaires home, complete them, and bring them to the next class session. They were also told to write down how long it took them to complete the questionnaire. 33 out of the 100 distributed questionnaires were returned.

An analysis of the completed questionnaires revealed that the students did indeed understand how to fill them. They provided well-thought out and clear resolutions to the various scenarios, and followed the stated instructions very well. The fact that first-year students could understand the instructions, content and terminology of MAMOC so well provided the researchers with confidence that the actual respondents of the study, second-year accounting students at USIM, would understand just as well.

Savulescu et al. (1999) explain that any instrument that is to be used to measure moral competence must be capable of being reliably applied by different raters. They also suggested that "naïve" raters should be utilized (naïve raters are those not involved in the development of the instrument). Following Savulescu et al.'s (1999) advice, after the pilot study was completed, the inter-rater reliability of the scoring system was assessed using the completed questionnaires from the pilot study; Inter-rater reliability is defined as the degree to which different judges or raters agree in their assessment decisions" (Phelan & Wren, 2006). One of the researchers and one naïve rater used the model answers to assess the moral competencies of the students that participated in the pilot study. Halgren (2012) stated that Intra-Class Correlation (ICC) is the most commonly used statistical procedure to determine inter-rater reliability for studies that have two or more raters, with continuous variables. SPSS was used to calculate the instrument's inter-rater reliability using ICC. High ICC values indicate greater inter-rater reliability, with an ICC estimate of the 1 indicating perfect agreement and 0 indicating only random agreement. Negative ICC estimates indicate systematic disagreement between the raters (Halgren, 2012). After the completed pilot study questionnaires had been rated by one of the researchers and the naïve rater, an Intra-Class correlation coefficient of 0.943 showed that the two raters had an almost perfect agreement when assessing the moral competencies of the pilot study participants. This result proved the reliability of the model answer for assessment of students' moral competencies.

Another revelation of the pilot study was the fact that it took the students an average of thirty minutes to complete the questionnaire. This time was then used for the actual study. Finally, the pilot study revealed that the best approach for conducting the survey would be to get the students to complete the survey during class time, as opposed to letting them take it home and bringing it back during the next class session. By conducting the survey in class, the researchers were able to collect the completed questionnaires immediately, thus ensuring a much higher response rate in the actual study.

As specified in an earlier section of this paper, moral competence (MC) from an Islamic perspective is a product of two components: moral action in line with the Qur'an and *Sunnah* (MA) and moral intention to please Almighty Allah alone (MI). Participating students were asked to resolve each scenario by stating the action they would advise their friend to take (MA), and providing a reason for that advice (MI). If a student's MA corresponded with the model MA, a score of 1 was given; if it did not, a score of 0 is given. The same rule applied for MI (1 for the correct reason, and 0 for incorrect reason). For each scenario, a student's $MC = MA * MI$. For a student to have a score for any scenario, both MA and MI must have corresponded with the model answers, otherwise he or she scored 0 for that scenario. Scores for each scenario were added to provide an overall MC score for each student; MC scores could range from a minimum of "0" to a maximum of "10". Following the approach adopted in the pilot study, all sections of a compulsory second-year were surveyed using MAMOC. 66 students completed the instrument.

RESEARCH FINDINGS AND DISCUSSION

This section of the paper presents the research findings and their implications. The descriptive statistics of the study's respondents is presented first. The students' mean MC scores are presented next, and this is followed by a more detailed analysis of their performance for each scenario and the implication vis-a-vis their future as Malaysian accountants. To provide insight as to the performances of the students overall vis-a-vis their moral competencies, as well as their performance for each scenario, an undergraduate grading system for Malaysian public universities will be utilized. The lowest grade for a pass is a grade of "C". The grading system is presented in Table 1 below:

Table 1: Malaysian Undergraduate Grading System

Percentage Score	Letter Grade	Quality Point Equivalent	Remark
85-100	A	4.00	Excellent
75-84	A-	3.67	Extremely Good
70-74	B+	3.33	Very Good
65-69	B	3.00	Good
60-64	B-	2.67	Fairly Good
55-59	C	2.33	Satisfactory
50-54	C-	2.00	Quite Satisfactory
45-49	D	1.67	Poor
40-44	D-	1.33	Very Poor
35-39	E	1.00	Extremely Poor
0-34	F	0.00	Failed

Source: IIUM website

Moral Competencies of second-year Muslim Accounting Students at USIM

Tables 2 and 3 below presents information about the study's sample via descriptive statistics: The 66 students sampled had an average age of 21 years, and females made up 81.2% of the sample, with 54 out of the 66 students being females. Table 4 presents the mean moral competency of the 66 second-year Muslim accounting students surveyed at USIM. The students' had a mean moral competency of 5.17 out of a maximum of 10; This is a percentage score of 51.7%, which according to Table 1 means that students surveyed earned a moral competence grade of "C-" which USIM considers "Quite satisfactory", but interestingly is below the "C" grade necessary for graduation from the accounting department. The implication of this statistic is that the accounting department has a lot of work on its hands to enhance the moral competencies of these students from a failing grade of "C-" to an "excellent" grade of "A". The task of achieving an "A" grade is not overly ambitious, because as Muslim accounting educators, Islam teaches us that in whatever we do, we must strive to achieve perfection: **The Prophet Muhammad (PBUH) said: Verily, God loves if any of you does a job, he does it with perfection" (Al-Bayhaqi).**

Table 2: AGE

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	66	20	23	21.00	.351
Valid N (listwise)	66				

Table 3: GENDER

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid MALE	12	18.2	18.2	18.2
FEMALE	54	81.8	81.8	100.0
Total	66	100.0	100.0	

Table 4: Mean Moral Competence Score

	N	Minimum	Maximum	Mean	Std. Deviation
MCSCORE	66	1	10	5.17	1.958
Valid N (listwise)	66				

Section 2: Choosing your dream job

Table 5: Choosing your dream job

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0	45	68.2	68.2	68.2
1	21	31.8	31.8	100.0
Total	66	100.0	100.0	

Table 5 above shows that only 31.8% of the students were able to understand that none of the five jobs offered were acceptable from an Islamic perspective. According to USIM's grading system, the students scored a failing grade of "F" in this scenario. In assessing the responses of the majority of the students, it was observed that salary was major motivation for job selection, closely followed by personal interest.

This statistic has grave implications regarding the moral competencies of Malaysia's future Muslim accountants. This is because, working in an organization that is involved in *haram* (prohibited) activities has devastating spiritual effects on the soul of a Muslim. All earnings from such a job are considered *haram*, and thus any usage of those earnings are also considered *haram*. In fact, choosing to work in a *haram* organization negates all the other eight qualities included in the profile of a morally competent accountant. Being trustworthy and professionally diligent whilst working in a *haram* organization has no value in the sight of Allah, as the foundation is rotten, and Allah only accepts what is pure. The following *hadith* provides a clear description of the grave consequence of choosing a *haram* job: **Narrated Abu Hurairah: that the Messenger of Allah (PBUH) said: "O you people! Indeed Allah is Tavyib (good) and he does not accept but what is good. And indeed Allah ordered the believers with what He ordered the Messengers. He (PBUH) said: 'O you Messengers! Eat of the good things and do righteous deeds. Verily I am well acquainted with what you do (Q23:51).' And He said: 'O you who believe! Eat from the good things We have provided you (Q2:172).'** He said: **"And he mentioned a man: 'Who is undertaking a long journey, whose hair is dishevelled and he is covered with dust. He raises his hands to the heavens and says: "O Lord! O Lord!" Yet his food is from the unlawful, his drink is from the unlawful, his clothing is from the unlawful, and he was nourished by the unlawful. So how can that be accepted?"** (Jami at-Tirmidhi, Book 47, *Hadith* 3257).

This statistic also serves as crystal-clear guide for the accounting department at USIM on what to focus on in developing the moral competencies of these students. Almost 70% of their second-year class do not possess the fundamental moral competence to understand that they must work in an organization approved by Allah to be successful in this world and the next. The department must make sure that students are inculcated with this fundamental aspect of Islamic moral competence.

Section 3: Living your dream job

Scenario 1: Professional Conduct

Table 6: Professional Conduct

	Frequency	Percent	Valid Percent	Cumulative Percent
0	4	6.1	6.1	6.1
Valid 1	62	93.9	93.9	100.0
Total	66	100.0	100.0	

Table 6 above shows that unlike in the "choosing your dream job" scenario where the students' had a failing grade, they did much better regarding resolving the professional conduct scenario, with a percentage score of 93.9% corresponding to a resounding "A" grade which is ranked as "excellent". The implication of this statistic is that a vast majority of USIM's second-year accounting students understood that a job was a trust and that Allah would hold them accountable for fulfilling that trust. For this reason, they understood that they had to strictly follow the working hours stipulated by the organization in order to fulfil that trust. Additionally, it showed that they were aware of the fact that as future professional Muslim accountants, they have a duty to maintain a high level of conduct as they discharge their duties. Almighty Allah says: **"Indeed, Allah commands you to render trusts to whom they are due and when you judge between people to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is ever Hearing and Seeing" (An-Nisa: 58).**

Regarding this attribute, USIM's accounting department need not be worried. What the lecturers need to do is to reinforce this attribute amongst the students throughout their academic career at USIM.

Scenario 2: Trustworthiness

Table 7: Trustworthiness

	Frequency	Percent	Valid Percent	Cumulative Percent
0	27	40.9	40.9	40.9
Valid 1	39	59.1	59.1	100.0
Total	66	100.0	100.0	

Table 7 above reveals that 59.1% of the students showed signs of trustworthiness by correctly resolving this scenario. This earned them a "C" grade and a "satisfactory" performance regarding this quality. The students who successfully resolved this scenario revealed an understanding of the fact that they had a moral obligation to avoid the manipulation of financial statements despite external pressure from superiors. As Muslim accountants, accountability is first and foremost to Allah above all else: **That is only Satan who frightens [you] of his supporters. So fear them not, but fear Me, if you are [indeed] believers (Ali 'Imran: 175).**

Scenario 3: Professional Competence and Diligence

Table 8: Professional Competence and Diligence

	Frequency	Percent	Valid Percent	Cumulative Percent
0	37	56.1	56.1	56.1
Valid 1	29	43.9	43.9	100.0
Total	66	100.0	100.0	

Table 8 above reveals that only 43.9% of the students correctly resolved this scenario, thus earning them a "very poor" grade of "D-". 56.1% of the students put their personal interests over their diligence as accountants by advising their friend in the scenario to place RM20 of his own money into the company account to rectify a discovered irregularity, so as to make a flight for a holiday; The justification for this choice was that the amount was immaterial. The role of the accounting lecturers at USIM is to make sure that these students understand that Islam holds Muslims to a much higher standard, and regardless of the amount of the irregularity, the correct resolution that reflected professional competence and diligence was for the accountant to go through all the company transactions again so as to identify and rectify the irregularity. This is what his job entails and as a

Muslim accountant, he is obligated to fulfil. **"O you who have believed, fulfil [all] obligations..."** (Al-Ma'idah:1).

Scenario 4: Avoiding Interest

Table 9: Avoiding Interest

	Frequency	Percent	Valid Percent	Cumulative Percent
0	48	72.7	72.7	72.7
Valid 1	18	27.3	27.3	100.0
Total	66	100.0	100.0	

Table 9 above shows that only 27.3% of the students correctly resolved this scenario, which earns them a grade of "F" and a remark of "Failed". Only 18 out of 66 students understood that dealing with interest is strictly forbidden in Islam.

USIM's accounting department has to develop a deliberate and clear strategy to dramatically improve this statistic over the course of the academic careers of these students. This is because dealing with interest is a major sin with severe consequences: **"O you who have believed, fear Allah and give up what remains [due to you] of interest, if you should be believers. And if you do not, then be informed of a war [against you] from Allah and His Messenger. But if you repent, you may have your principal - [thus] you do no wrong, nor are you wronged (Al-Baqarah: 278-279).**

Scenario 5: Avoiding gambling

Table 10: Avoiding Gambling

	Frequency	Percent	Valid Percent	Cumulative Percent
0	29	43.9	43.9	43.9
Valid 1	37	56.1	56.1	100.0
Total	66	100.0	100.0	

Table 10 above reveals that 56.1% of the students correctly resolved this scenario, thus earning a "satisfactory" grade of "C". The students' responses showed that 43.9% of them did not realize that any form of gambling is prohibited in Islam, even if it is done supposedly to encourage a virtuous behaviour, as was the case in the scenario. According to USIM's grading system, this grade is a passing grade. However, USIM's accounting department has significant room for improving the students' moral competence regarding gambling, considering involvement in it is an impediment to one's success: **"O you who have believed, indeed, intoxicants, gambling, [sacrificing on] stone altars [to other than Allah], and divining arrows are but defilement from the work of Satan, so avoid it that you may be successful"** (Al-Maidah: 90).

Scenario 6: Avoiding physical contact with the opposite sex (non-mahram)

Table 11: Avoiding physical contact with non-mahram

	Frequency	Percent	Valid Percent	Cumulative Percent
0	29	43.9	43.9	43.9
Valid 1	37	56.1	56.1	100.0
Total	66	100.0	100.0	

Table 11 above reveals that 56.1% of the students correctly resolved the scenario, earning a grade of "C" which is deemed "satisfactory". In Islam, men and women who are unrelated (*non-mahram*) are not allowed to have any physical contact whatsoever. This is evidenced by the following hadith: **Ma'qil ibn Yassaar said: the Messenger of Allah (PBUH) said: "For one of you to be stabbed in the head with an iron needle is better for him than that he should touch a woman who is not permissible for him."** (At-Tabarani, *al-Kabeer*, 486).

Most of the students who incorrectly resolved the scenario actually understood that Muslim men and women who are unrelated are not allowed physical contact, no matter how benign. However, they had the misconception that as long as the woman wore gloves, it was acceptable. Renowned Islamic scholar, Shaykh Abd-Allaah ibn Jibreel clarifies this misconception as follows: "It is not permissible for a woman to shake hands with a *non-mahram* man even if she is wearing gloves or she shakes hands from under a cloth or *abayah* (flowing gown). All of that counts as shaking hands even if there is some kind of barrier" (14044: Is a woman sinning if she shakes hands with a man?, n.d.). Some other students felt it was okay for a Muslim woman to shake a *non-mahram* man so as not to offend his sensibilities. This is of course not acceptable Islamically; we must never please people whilst displeasing our Creator.

Scenario 7: Objectivity

Table 12: Objectivity

	Frequency	Percent	Valid Percent	Cumulative Percent
0	21	31.8	31.8	31.8
Valid 1	45	68.2	68.2	100.0
Total	66	100.0	100.0	

Table 12 above reveals that 68.2% of the students correctly resolved this scenario, thus receiving a "good" grade of "B". 45 out of 66 students understood that as Muslim accountants, they have to be objective in discharging their duties; there is no room for bias as an accountant. This is an encouraging statistic regarding Malaysia's future Muslim accountants, considering that in Islam, objectivity is synonymous with justice and is a very important virtue. However, there is always room for improvement. **O you who have believed, be persistently standing firm for Allah, witnesses in justice, and do not let the hatred of a people prevent you from being just. Be just; that is nearer to righteousness. And fear Allah; indeed, Allah is acquainted with what you do** (Al-Maidah: 8).

Scenario 8: Confidentiality

Table 13: Confidence

	Frequency	Percent	Valid Percent	Cumulative Percent
0	49	74.2	74.2	74.2
Valid 1	17	25.8	25.8	100.0
Total	66	100.0	100.0	

Table 13 above reveals that only 25.8% of the students correctly resolved this scenario, earning them a "F" grade which is regarded as "failed". The scenario was designed to test the students' understanding regarding the limits of confidentiality as Muslim accountants. As Muslim accountants, we are bound to keep the secrets of the company as long as their actions are good; once they venture into systematic evil (cooking the books in this scenario), our loyalty ends and we have to become whistle-blowers so as to safeguard the rest of society from the evil consequences of the company's actions: **"... And cooperate in righteousness and piety, but do not cooperate in sin and aggression. And fear Allah; indeed, Allah is severe in penalty"** (Al-Maidah: 2). USIM's accounting department must ensure that students understand that their loyalty as accountants is first and foremost to their Creator; Company actions done in line with His commands are protected, whilst those that continually violate His commands and harm society, are exposed: **"You are the best nation produced [as an example] for mankind. You enjoin what is right and forbid what is wrong and believe in Allah"** (Ali-Imran: 110).

Scenario 9: Final Decision

Table 14: Final Choice

	Frequency	Percent	Valid Percent	Cumulative Percent
0	30	45.5	45.5	45.5
Valid 1	36	54.5	54.5	100.0
Total	66	100.0	100.0	

Table 14 above shows that 54.5% of the students correctly resolved this scenario, thus earning a "satisfactory" grade of "C". The students were asked if they would still work in the company considering their experiences in all the previous scenarios. The students who successfully resolved this scenario understood that as Muslims, we are not allowed to stay in an environment where evil activities are predominant. The following verse explains this fact: **And it has already been revealed to you in the Book (this Quran) that when you hear the Verses of Allah being denied and mocked at, then sit not with them, until they engage in a talk other than that; (but if you stayed with them) certainly in that case you would be like them. Surely, Allah will collect the hypocrites and disbelievers all together in Hell" (An-Nisa: 140).** As-Sa'di, the renowned commentator of the Noble Quran, explains this verse as follows: "That is, if you sit with them in the situation mentioned then you are like them, because you have approved of their disbelief and mockery, and the one who approves of sin is like the one who does it. The point is that the one who attends a gathering in which Allah is disobeyed has an individual obligation to denounce them, if he is able to do so, or to get up and leave, if he is not able to denounce it" (*Tafseer* As-Sa'di, p210). The accounting department at USIM must make significant efforts to instil in these students the fact that as Muslim accountants, it is not permissible to stay in an organization that continually violates Allah's commands in its activities. This toxic environment degrades a person's faith and endangers his success in this life and the next.

Summary of Results and Recommendations

Table 15: Summary of Results

S/ N	Scenario	Percentage Score	Grade	Remark	Status (Pass/Fail)
1.	Finding the "right" job	31.8%	F	Failed	Fail
2.	Professional Conduct	93.9%	A	Excellent	Pass
3.	Trustworthiness	59.1%	C	Satisfactory	Pass
4.	Professional Competence and Diligence	43.9%	D-	Very poor	Fail
5.	Avoiding Interest	27.3%	F	Failed	Fail
6.	Avoiding Gambling	56.1%	C	Satisfactory	Pass
7.	Avoiding physical contact with <i>non-mahram</i>	56.1%	C	Satisfactory	Pass
8.	Objectivity	68.2%	B	Good	Pass
9.	Confidentiality	25.8%	F	Failed	Fail
10.	Final Choice	54.5%	C-	Quite Satisfactory	Fail

Table 15 above presents a summary of the students' performances in each of the scenarios contained in MAMOC. It can be observed that the student's failed to successfully resolve five out of the ten scenarios. Additionally, the table shows that the students achieved the highest grade of "A" in only one of the scenarios, "professional conduct". The implication of these results for USIM's department of accounting is that there needs to be an extensive review of the ethical content of the accounting curriculum to ensure that it is comprehensive enough to address these deficiencies in the moral competencies of the current crop of second-year accounting students. The highest priority should be given to those qualities which the majority of students failed to successfully resolve, particularly in selecting Islamically-appropriate places to work, avoiding dealing in interest, and in understanding the limits of a Muslim accountant's duty of confidentiality.

An important question to ask is as follows: Even after reviewing and upgrading the ethical content of its curriculum to address the deficiencies in the moral competencies of the current second-year students, how will the accounting department at USIM know whether or not these efforts have been successful? The answer lies in a popular saying attributed to management guru, Peter Drucker, "**what gets measured gets done**" (Price, 1996;

Bisschoff, 2001; Woodard, 2004). The only way to determine USIM's impact on the moral competencies of these accounting students is to institutionalize the measurement of students' moral competencies alongside the traditional Cumulative Grade Point Average (CGPA); such a measure could be called the Moral Grade Point Average (MGPA).

The good news is that the Malaysian Ministry of Higher Education have also reached the same conclusion; in 2015, the **Integrated Cumulative Grade Point Average (iCGPA)** was introduced and is to be pilot-tested in 5 public universities. The iCGPA is intended to provide a more comprehensive measure of student performance by addressing nine specific skill sets: 1) Knowledge and understanding, 2) Practical skills, 3) Social skills and responsibilities, 4) Professional skills, ethics and values, 5) Communication skills, leadership and teamwork, 6) Problem-solving skills and scientific thinking, 7) Information management and lifelong learning, 8) Entrepreneurship and Management, and 9) Unity and patriotism (Ann, 2015; Khor, 2015; Tay, 2015). This paper's recommendation of institutionalizing the measure of accounting students' moral competencies would be addressed by the fourth skill set.

CONCLUSION

Two decades of financial scandals have seriously damaged the credibility of accountants as guardians of financial information. To repair this credibility, universities have been identified as crucial to the development of morally competent accountants for the future. In 2012, the Malaysian government joined this crusade through the release of a blueprint to revolutionize the Malaysian educational system. One of the key mandates of this blueprint was for Malaysian educational institutions to produce morally competent professionals. This study sought to assist Universiti Sains Islam Malaysia (USIM) in meeting this important mandate by evaluating the moral competencies of its second-year accounting students.

As USIM is an Islamic university, and all its final-year students are Muslims, an instrument was developed through a collaboration with Islamic accounting and *Fiqh Muamalat* scholars to measure the moral competencies of these students from a wholly Islamic perspective. Islam's two primary sources of guidance, The Noble Quran and *Sunnah* were relied upon to develop this instrument. The instrument called Muslim Accountant Moral Competency Test (MAMOC) contained ethical scenarios to measure nine qualities required for a morally competent Muslim accountant; 66 second-year accounting students were surveyed using MAMOC.

The results of the survey revealed that according to USIM's own grading system, the current crop of second-year accounting students were not morally competent enough to deal with the inevitable moral dilemmas they would face in the work place. The students were particularly weak regarding selecting an Islamically-appropriate place to work, avoiding dealing with interest, as well as in understanding their confidentiality duties as Muslim accountants. On the bright side, the students showed a very clear understanding of the importance of being professional and objective as future accountants.

This implications of these results is that at the moment, USIM's accounting department has to critically examine its current curriculum as to its ethics coverage, particularly regarding qualities that the students scored very low on. The department has as its stated mission the production of accounting graduates "who are instilled with Islamic values" (Bachelor of accounting programme description, n.d.). It must make sure it does all it can to fulfil this noble mission. **"It is most hateful in the sight of Allah that you say that which ye do not" (As-Saff: 3).**

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INVESTIGATING THE LEVEL OF DESPAIR OF INMATES LIVING IN THE PRISON DEPENDING ON AGE AND MARITAL STATUS FACTORS (TURKISH REPUBLIC OF NORTHERN CYPRUS SAMPLE)

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Abstract: The aim of the study is to determine whether there is a big difference between the level of inmates living in a prison located in North Cyprus connected to Ministry of Internal Affairs, depending on factors such as age and marital status. Sample of the study consists of 110 prisoners living in the prison in Cyprus. Data is collected by means of the personal individual form designed by the researcher and Beck Despair Scale (BUO). Average and standard deviations are used in defining data while variant analysis ANOVA and then Duncan TEST (5%) are used in analysing data. The most hopeful group observed in the study is prisoners at the age interval 31- 40 ($X=4.97$). no significant change between the groups seen in terms of marital status factor statistically ($P=0,117$). However, the difference between the married ones which is the most hopeful group ($X=4.26$) and divorced ones as the most hopeless group ($X=7,76$) is significant.

Key words: Prison, Inmate, Despair.

INTRODUCTION

Prisons can be described as environments in which the prisoners' independence comes to an end as they face to face with privation. A prisoner living in a prison is away from a series of stimulus which are very important for the person such as their lifestyle, family and house having the necessity and obligation of staying with people who experience the same problems. Yet, they are not able to contact their parents when they need, they can't feel secure, being excluded by individuals of the society as unwanted members. Özkurkcugil (1998), states that as the prisoners feel they aren't wanted and liked anymore by people with whom they lived mostly together, is a handicap for them in trying to adapt the life inside the prison. After feeling this, they cannot get used to the life inside the prison. Also, a person who always thinks about their situation within the prison and life after sent back to normal life may come face to face with psychological problems. Therefore, prisons may be settings where privations applied psychologically and bodily having special atmosphere in which the prisoners have no freedom. Deaton, Aday and Wahidin, 2009-2010; Keaveny and Zauszniewski, 1999; Özgüven and friends, 2003; Özkurkcugil, 1998; Palmer and Connelly, 2005) state that in such atmosphere, the ability of prisoners of standing decreases causing negative outcomes such as depression, despair, feeling lonely and suicide. Gencoz Vatan and Lester (2006), state that despair can be defined as; having a bad mood due to negative and pessimistic thoughts about one's future aims and fear of failure losing their hope. Cuhadaroglu (1993), indicates that despair includes negative perceptions of the person's themselves, their future and their world. The person having despair can perceive that he/ she is hopeless in coming up with the problems and conditions available currently. They may feel worthless and have the idea that it is unnecessary to go on living. Such

changes on the person can be signs of depression and suicide. One of the approaches to depression, despair and suicide is Beck's cognitive approach. According to this approach, people who tend to have depression evaluate themselves, their future and life outside as meaningless things. (Beck, 1963; Durak and Palabıyıkoglu, 1994), state that depressed people see themselves as insufficient, poor, worthless and faulty seeing life as full of problems and hard conditions. Deaton, Aday and Wahidin, 2009-2010; Keaveny and Zauszniewski, 1999; Palmer and Connelly, 2005) inform that in a series of studies on prisoners, it is seen that hopelessness and despair is a cognitive factor causing suicide showing that there is a close relationship between despair, depression and suicide.

Studies available in the literature done in Turkey and other countries as well which shows despair levels of inmates. However, no study observed in the literature on the issue that prisoners in TRNC have different levels of despair depending on factors such as age and marital status. In this sense, it is suggested that the study is important to remove this lack.

Sentence of the problem (research question)

Is there a significant difference between despair levels of inmates depending of age factor and marital status?

Sub-problems of the study

1. Is there a significant difference between prisoners' despair levels depending on age factor?
2. Is there a significant difference between prisoners' despair levels depending on marital status?

METHOD

Model of the research

This is a screening research which investigates whether there is significant differences in despair levels of prisoners depending on age factor and marital status.

Population and Sample

The population of the study consist of inmates living in the prison in Cyprus. Sample of the study consist of prisoners living in a prison in Cyprus connected to the Ministry of Internal Affairs, 4 of the participants are women (3.6%) and 106 men (94.6%) who have been choosen among prisoners randomly.

Data collection Tools

*Beck's Scale of Despair:*The scale was developed by Beck and his friends. It is used to determine expectations of a person from the future. It consists of 20 items having the interval 0-1. Is is assumed that the level of the person's despair is high when the score is high.

Personal Information Form: The form includes information about the individuals such as age, sex, marital status, education, occupation, economic status, reason of their being sent to prison and the crime, duration in the prison, period of time left to leave the prison, how they entered the prison, emotions when they arrived, whether they got psychological support in the period they spent in the prison, whether they harmed themselves when

living in the prison, frequency of their family members' and friends' visits, how their crime and prison life to affect their life in the future and fear of this, are included and judged.

Data analysis

Data is analysed by SPSS 13.00 package program. Level of despair of the inmates is investigated according to age factor and marital status. In defining data, average and Standard deviations are used. As two of the groups (age and marital status) have more than 2 variables ANOVA and after it Duncan Test are used. The level of importance is calculated on 0.01.

Process

In advance of data collections, inmates were informed about the content of the study and volunteer ones were included. When data analysed, items and questions left empty were not included.

FINDINGS

The first sub-problem of the study: Is there a significant difference in levels of despair of the prisoners according to their age?

Table 1: comparison of inmates' scores depending on age factor with average and Standard deviations on ANOVA and Duncan Test (5%)

age	N	average	Standard deviation	Duncan Sig. P value(%5)
15-20	11	6,3636 ab	2,50091	
21-30	41	5,2195 b	4,90669	
31-40	38	4,9737 b	5,51405	
41-50	12	5,1667 b	4,68718	,030
51-60	4	6,0000 ab	4,54606	
60+	3	11,0000 a	7,21110	
Total	109	5,4312	4,97469	

As it can be seen from table 1, the despair level of 3 prisoners above the age of 60 is almost two times much more comparing to the other groups observed to be over 50%. In this sense, it can be said that level of despair becomes greater as the prisoner is older.

Table 2: comparison of inmates' scores depending on marital status with average and Standard deviations on ANOVA and Duncan Test (5%).

Marital Status	N	average	Standard deviation	Duncan Sig. P value (%5)
Evli	38	4,2632 a	4,09142	,117
Dul	2	5,0000 a	5,65685	
Bekar	52	5,5385 a	4,56956	
Boşanmış	17	7,7647 a	7,11977	
Total	109	5,4312	4,97469	

As it can be seen from table 2, there is no significant difference between despair levels of the prisoners depending on marital status. However, it was seen that the hopelessness levels of divorced and single inmates were higher. Also, it was observed that married prisoners had lower levels of being pessimistic. Hoplessness levels of married group is the lowest ($x=4.26$) while the most hopeless group is divorced ones ($x=7.76$).

DISCUSSION AND CONCLUSION

It was observed that the despair level of 3 prisoners above the age of 60 is almost two times much more comparing to the other groups was over 50%. The most hopeful group is the group of prisoners between the ages 31-40 ($x=4.97$). However, the difference between the married ones which is the most hopeful group ($X=4.26$) and divorced ones as the most hopeless group ($X=7,76$) is significant.

Dibaz and Seber (1993), in their study on inmates, state that prisoners think their future is ruined and their aims ended which caused them to be hopeless, depressed, fear resulting in negative outcomes.

Colsher, Wallace and Loeffelholz (1992), state that number of old prisoners increases due to aging of the generation and changes in punishment system.

Rikard and Rosenberg (2007) state that number of old prisoners in the USA in 1990s was 4% while it became almost three times much more reaching 13% in 2000.

Apart from these, it is indicated in different studies from different countries that suicide risk rate of people living in the prison is greater than that of normal people Kariminia, Law, Butler and Corben).

For Zibardo, the cost of a prisoner older than 60 is approximately 69.000 dollars while it is 21.000 dollars for a prisoner around the age of 30.

Rikard and Rosenberg (2007) state that young prisoners observed to have infectious diseases, drug addiction and psychiatric morbidity mostly while results of researches on physical problems of old prisoners aren't clear.

There are some limitations to the study. The study is carried out only in 1 prison in cyprus. Therefore, it is possible to make generalization with prisoners from this prison only. In further studies, more prisons and bigger samples can be included. The study is the first done on despair levels of prisoners living in the prison depending on age factor and marital status. Results of the study show that social support factor affects despair level and psychosocial status after living prison. Therefore, psychologists and social support experts working in prisons in order to provide social support to the inmates have great deal of responsibilities.

IS WILLIAMS SYNDROME THE ‘CONVERSE’ OF AUTISM SPECTRUM DISORDER?

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Abstract: Williams Syndrome (WMS) and Autism Spectrum Disorder (ASD) are neuro-developmental disorders associated with distinct social phenotypes. Infant and young children associated with these two disorders provided evidence of developmental delay. This paper attempts on analyzing the extent of convergence and divergence of the behaviours in WMS and the symptoms of ASD. Features of diagnosis and characteristics, as well as developmental achievements in these two disorders will also be addressed further. Moreover, in depth discussion and comparison on a number of aspects including; intellectual ability, visual-spatial skills, language and communication, social interaction and emotion detection, in regards to both disorders will be dealt in detail throughout the rest of this paper.

INTRODUCTION

Williams Syndrome

Children with Supra-Valvular Aortic Stenosis (SVAS) were referred to as Williams Syndrome (WMS), coined by Williams and colleague in the early 1960s (William & Campbell, 1960). These children were characterized with several physical appearances, which consist of medial flare of the eyebrows, lacy stellate (star-burst) pattern of the irises, flat nasal bridge with a bulbous tip and ante-verted nares. Their facial look is often described by the founder as elfin or ‘pixielike’ and symptoms of mental retardation were also reported (William & Campbell, 1960). Interestingly, similar characteristics were found in a study conducted by Beuren and colleague (1962). In their study, they identified another set of feature in which the children have hypoplastic teeth despite full lower lip with a wide smile, and small chin (Beuren, Aplitz & Harmjan, 1962).

They are also characterized as being very friendly and active. For example, von Arnim and Engel (1964) described individuals with WMS as showing a very good rapport with anyone they meet and easily involved in the conversation with their communication partner. They were able to establish interpersonal contacts within a few minutes time. Those being identified with WMS seems like very curious of getting to know each without any worries even with strangers. Kaplan et al. (2001) had listed four characteristics that have elicited the most interest which are the individual’s social relationships, activity level, anxiety level, and sleep problems. The most consistent outcomes have been reported is that the children with WMS are highly interested in social interactions and very empathic.

In some cases, other personality characteristics appeared to be such as hyperactivity, impulsivity and low frustration tolerance (Tomc, Williamson & Pauli, 1990). Therefore, it may cause problems with social interactions. Along these lines of reasoning, researchers have found that individuals with WMS have difficulty in understanding other’s beliefs or points of view, which may contribute to some of their social difficulties. Individuals with WMS are also reported to present low IQ levels (Mervis, Morris, Bertrand & Robinson (1999). Despite the case, their cognitive functioning including vocabulary knowledge, face processing, and auditory rote

memory remains intact (Bellugi et al., 1992; Mervis et al., 2000). Interestingly, when compared with other atypical groups (eg. Down syndrome or non-specific mental retardation) that matches their mental age, subjects with WMS were reported to gain significantly higher scores on cognitive abilities (Wang, 1996).

WMS is thought to be due to genetic mutation. Studies revealed that the mutation occurs at the long arm of Chromosome 7. Elastin gene, which is located at the aforementioned chromosome, is micro-deleted in the case of WMS. This deletion often results in severe physical abnormalities including; cardiovascular complications, elevated blood calcium levels, sensitive hearing and high blood pressure, failure to thrive in infancy, abnormal sensitivity to certain classes of sounds (hyperacusis) (Ewart et al., 1993), and moderate to severe learning difficulties (Plissart & Fryns, 1999). In a study conducted by Paul et al. (2000) an estimate of 1 in 20,000 live births suffered WMS and nearly all cases resulted from de novo deletion events in the genetic material.

Autism Spectrum Disorder

Above paragraphs had described briefly on WS and its characteristic. Accordingly, this paper will explain some aspect to be known about ASD before further discussion. Autism is relatively diverse, and to define it properly is rather subjective. Children with ASD are described as without any obvious physical signs and biological markers (Frith, 2003). However, despite the lack of the previously mentioned characteristics, it is very similar to WMS in terms of mental retardation or learning disability. The developmental approach of cognitive theory referred to as the *mind-blindness hypothesis* explains the underlying features of autism. This theory proposes that, children with ASD have missing their intuitive ability to understand other people's thoughts and mental state (Baron-Cohen, 1995). In fact, previous study assumed that ASD as resemblance to an adulthood mental disorders named schizophrenia (Wing & Gould, 1979). However, since a question arises about the children who are diagnosed with schizophrenia before puberty, therefore it remains debated.

Despite numerous studies on ASD, the aetiology remains unknown. However, genetic and environmental factors are thought to play important roles in the development of ASD. Environmental factors including complication during pregnancy and birth often contributes to fetal abnormalities that present in children with ASD (Frith, 2003). Children suffered with ASD frequently presented with brain damage in comparison to normal individuals. Viral infection and immunization disorders were also thought to cause ASD however these factors are trivial. In terms of the genetic factor, Rutter and Folstein (1977) reported that approximately 90 percent of concordance was found in identical twins for milder forms of autism. In addition, Rutter (2000) reported that 3 to 6 percent the risk of second child being affected in family that has more than one child with ASD.

Originally referred by Kanner (1943) and Asperger (1944), ASD relates to a fundamental biological disturbance that is present from birth. Both authorities found some fascinating features of these children that seemed they have disturbance to establish normal relationships with the peers. A child with ASD is more interested in the world of objects rather than peers and people around them. Indeed, autistic loneliness, desire for sameness and islets of ability serve as a reference point for features of classic autism (Kanners, 1943). Unlike other typical developing children, Abbe Pierre-Josseph noticed that children with ASD are lack of imaginative play. This deviant characteristic was realized since 1800 towards a boy called Victor (Lane, 1976). All the findings come into logical conclusion that children with ASD appeared to be difficult to participate normally with other people and their surroundings thus, lead to disturbance in social integration.

Children with ASD were initially thought to be deaf. This premise was brought up given the lack of responsiveness to other people's voice. However, it was realized that these children were actually reacted unusually towards certain sound (Rapin & Allen, 1987). Children suffered with ASD are monotonously repetitious in all their performance just like as it was when they utter verbally. Besides that, communication impairment such as delayed speech production was also observed in ASD children (Bauman, 1999). While children with hearing impairment communicate through signs, gestures and facial expressions, children with

ASD tended not to do so. Nevertheless, despite their handicap, these children exhibited unexpected outstanding achievements. These children have an excellent memory and often skilled in music and drawings (Happé 1999).

Using standard diagnostic handbooks, Chakrabarti and Fombonne (2001) showed a huge increase of prevalence approximately 60 per 10 000 of the population with ASD. The increasing prevalence is probably due to greater awareness of autism that meant for more cases looking forward to be diagnosed. Equally important, the increment of the prevalence accordingly reflected by varies definition of autism itself across professional in different countries. Recently, the diagnostic criterion of ASD is described in Diagnostic and Statistical Manual (DSM) (American Psychiatric Association, 2000). In the same way with classical features of autism, it was decided by American Psychiatric Association (APA) (2000), children must at least meet with two out three criteria, which include qualitative impairment in reciprocal social interaction, qualitative impairment in verbal and non-verbal communication relative to developmental level. Also, they must be a markedly restricted repertoire of activities and interests appropriate to developmental level. These criteria have been collectively accepted worldwide for ASD diagnosis and to the benefit of research purposes and clinical practice (Hill & Frith 2003). The following paragraphs will discuss issues that concern with converging aspects in both WMS and ASD.

Overlapping behavioral symptoms in Williams Syndrome and Autism Spectrum Disorder

There are numerous studies that indicate the similarities of WMS and ASD. Symptomology patterns for instance, especially unusual perception and sensitivity towards sound and noise, were found to be overlapped in children diagnosed with ASD and WMS (Levithin et al., 2005). The similarity in terms of genome analysis also has been discussed in years back (Berg et al., 2007). Another study conducted by Lincoln et al. (2002) showed patients with WMS exhibit inability to rapidly shift attention, a characteristic similar to adults with autism and cerebellar lesion patients. In this study, three main tasks were conducted mainly on visual and auditory focus, as well as shifting attention. However, due to individual differences in terms of their cerebellar vermis size, a much longer time was needed to allow them to shift their attention to match the performance present by individuals with ASD. Despite interesting findings, several limitations were found including small number of patients combined with issues concerning age groups. Further study with more parameters could be conducted to get much concrete results.

Additionally, mental retardation or learning disability is found to be frequently associated with both ASD and WMS. Chakrabarti and Fombone (2001) reported that 25% to 40% of patients with ASD have an IQ under 70. Other report showed approximately 25% of children with WMS to have learning disability while the remaining displays unlimited IQs and adaptive behavior quotient consistent with mental retardation (Mervis and Klein-Tasman 2000). However, the exact average cut of point of IQ levels in both disorders varies upon time as they might present in different degree of cognitive ability in each of the disorder. In fact, some of the evidence unlikely would affect the percentage obtained when some of the assessment were not conducted using the standardized test.

Furthermore, unique ability usually called as savant abilities were known to occur in both disorders. For example, children with ASD displayed extra-ordinary skills in areas of music, arts, and mathematics. As mentioned by Frith and Hill (2003), at least 10% of the autistic population to be present with these set of skills. Similarly individuals with WMS exhibited cognitive strength in music and arts. It is thought that certain areas of the brain are 'preserved' so as to influence their musical abilities (Lenhoff, Perales and Hickok 2001). This finding is supported in a study conducted by Schlaug, Jancke, Huang, and Steinmetz (1995). They revealed that the left planumtemporale (an auditory-related structure) is relatively enlarged in musicians. This correlates with their preliminary findings on brain structures of individuals with WMS. In years back the issues were less concerned about and investigated. Studies on ASD and WMS have redirected towards focusing on the cause and symptoms of the impairment for further intervention, rather than assessing their gifted talents. The reason being was, each individual have different distinct ability therefore it might be difficult for researchers to study and

generalize the entire population. Nowadays, with the development of technology and advanced instruments, this topic has given much attention.

Through Autism Diagnostic Observation Schedule (ADOS; Lord et al., 2000), Lincoln et al. (2007) assessed the specific features commonly associated with ASD that may be observed in young children with WMS. The criteria comprise of communication, social interaction, restricted and repetitive behavior as well as both functional and imaginative play. This study suggests ADOS discriminated the groups of both disorders by the indicator of gesture and quality of social trend (Lincoln et al., 2007). Despite several disabilities in communication, children with WMS were found to engage with others more frequently given the appealing nature of social interaction in-comparison to ASD children. However, apart from the large differences has been noticed, the researchers have to admit that there are still coexisting symptoms and behaviours to occur in children with WMS upon those with ASD.

The development of language and speech

In spite of the overlapping behavioral symptoms, there were divergent patterns known in terms of linguistic abilities between children with WMS and ASD. The idea that language is an intact ability in children with WMS was consistently questioned when research demonstrated linguistic abilities were evenly balanced with general cognitive functioning in WMS. However, with mental age-matched across these groups of disorder, it was significantly proves that children with ASD often demonstrating limited and difficulties of speech and language in contrast to children with WMS. Children with WMS, who usually present language delay in early childhood, appear to be good in their verbal performance rather than IQ performance (Edgin, Pennington & Mervis, 2010). Generally, these children have the capacity of vocabulary approximately equal to normal developing children. In a study conducted by Bellugi et al. (2000) where the general cognitive functioning and non-verbal ability of children with WMS were comparatively evaluated, strong linguistic ability were found in them. Similar results were obtained when a much larger sample were used (Karmiloff-Smith et al. (2003). In spite of the remarkable abilities showed, however in the set of conversation these children seem to have problem in understanding the full meaning of the topic discussed. Opposite to WMS, individual with ASD that to be known with language delay has shown better IQ's performance than their verbal performance. The following paragraph will discuss into greater extend on language ability between the two disorders in term of lexical development.

When compared with normal developing children, ASD and WMS children exhibited delayed achievements especially in finding their first and combining words. Up to 20% of children with ASD were reported to show language loss (Lord et al. 2004). Unlike delayed onset of first words by the majority of children with other disorders, children with ASD displayed deviant type of lexical growth (Berg, 2007). On the other hand, children with WMS presented pattern of vocabulary growth comparable to normal developing children at early ages (Lord et al. 2004). Intriguingly, these children have language skills greater than nonverbal skills when compared to children with Specific Language Impairment (SLI). Study conducted by Mervis (2004) demonstrated higher score ratings for language items than non-language items in toddlers with WMS.

In term of morphosyntactic abilities, children with WMS showed different trends with the one display by children with autism or even children with specific language impairment (SLI). Even though the morphological aspect was normally developed after the onset, the grammatical morphology seems to be delayed in children with WMS (Mervis et al., 1995). However, their findings suggested that delayed on grammatical morphology among individuals with WMS will not remain as it gradually improve and changing over the time. Unlike WMS, children with ASD and SLI may or may not acquire similar trend given the deviant pattern of their overall language acquisitions. For example, Roberts, Rice, and Tager-Flusberg (2000) have reported that children with ASD and SLI usually possess poor grammatical performance. They also found that, the most common errors made by these children were the omission of the finiteness marker. Although, over 90% of the time, children with ASD and SLI were able to produce other finiteness morpheme correctly, they are still struggling to elicit past tense and singular verbs of third person. Though this is the case, children with WMS presented different types of grammatical error.

In the study conducted by Zukowski (2004) more complex morphosyntactic skills had been investigated towards children with WMS. Similar pattern of errors made by typical developing children at early ages were observed in WMS samples. However, Zukowski (2004) had ignored the sentence samples by children WMS that contains relative clauses and negative questions. Such sentence productions were known to be difficult to comprehend by children with WMS. Albeit the fact that these studies did not make direct comparison between the two disorders, it somehow illustrates the different potential from each disorder in terms of morpho-syntactic skills. Additionally, it can be presumed that children with WMS are better (technically similar to typical developing children) in this area as compared to children with ASD.

The other convergent element in language ability to be discussed is speech fluency. The pattern of speech fluency identified among individuals with WMS is always the most essential criteria that inclusively used to compare with other neuro-developmental disorders. Due to the fact that only a small number of those with ASD have intact in speech production, it was less concern to investigate the ability of the speech fluency among the population. However, we will be able to predict the outcomes implied from the study on other groups with neuro-developmental disorders. Rossi, Moretti-Ferreira and Giacheti (2007) revealed the speech fluency profiles in WMS. Result showed that the frequency of word repetitions in the WMS was higher than typically developing groups. Using the conversational data from two groups that mental age-matched, they suggested that there might be correlation between the difference levels and pathway of lexical-semantic and syntactic access of the children with WMS to the occurrence of the disfluency. Their suggestion is highly acceptable because children with WMS were already known to have different way on the language acquisition process. Similarly, the occurrence of disfluency among children with ASD might also indicate the different rate and frequency as they too present with deviant pattern of language acquisition. Other language element that correlates with the pattern of speech fluency which needs to be considered by the researcher is phonological development, as it is crucial to the profile of speech production and fluency.

Another aspect of language and linguistic abilities seems to be equally important to be discussed between the two disorders is pragmatic. This issue is probably not attracting much attention compared to other non-pragmatic counterparts could be due to some reasons; firstly, the reluctance of children with ASD to interact with people around them is a well-known fact. Secondly, it is widely accepted that pragmatic impairments are the defining feature of ASD, rather than being a secondary result of the language impairment in contrast with children with other atypical disorders (Lord & Paul, 1997). However, it is necessary to be included in this essay in order to evaluate the potential between WMS and ASD. As described by many researchers, these pragmatic deficits include limited range of expressive language acts, for instance conversational and narrative skills (Tager-Flusberg & Sullivan, 1995). On the contrary, children with WMS have greater differences with ASD in terms of building rapport and engaging in conversation. That was indirectly presumed that pragmatic deficits were not a big concern to be included in the list of their impairment. However, from my own experience I have noticed that children with WMS did not respond and react correctly to the topic being discussed. This is in agreement with the findings from Paul & Cohen (1984) that these children lack the ability to understand the perspective of another person that they are communicating with. Further research needs to be carried out to clarify this matter.

The development of social interaction and emotional detection

Relating back to the previous topic, children with WMS characterized are as being excessively social and talkative, which is the opposite of individuals with ASD. According to, Riby and Hancock (2008), we need to give an equal focus to the social deficits that are associated with autism as much as what had been given to understand the implications of atypical social preferences in WMS. Their statement itself clearly describes convergent potential between these two disorders. Using the social scene picture as a stimulus items, Riby and Hancock (2008) obtained the results through eye-tracking procedure. Individuals with ASD were more interested with the body and background from the image given while those with WMS spent more time looking at the face. The ways both individuals with ASD and WMS present their view onto social interest were different depending on how they perceived and interpreted the social occurrences.

Despite the better performance on social interest among individuals with WMS, some of them was also associated with difficulties in social interaction. This issue was brought by Lincoln et al. (2007) as they noticed that some individuals with WMS showed one or two characteristics that enlisted for ASD. However, the occurred only in very small numbers among them, therefore this cannot be represented for the whole population. In fact, individuals with WMS are observed to be working hard to enhance their social performance and putting extra effort to interact with people around them, unlike those with ASD. Apparently, they are best described as having deficit in terms of seeking for attention compared with ASD that has always been oblivious towards others.

Another concern related to the earlier issue discussed is the ability to recognize and identify emotional state of facial expression. In their study, Lacroix et al. (2009) indicated that there was no difference between groups of WMS and ASD on the emotion matching and labeling tasks. It was shown that both children with WMS and ASD children have the same ability of labeling and matching emotions in facial expression without any verbal content. This result was similar to typically developing children. However, their findings was less concern in discussing the feedback when response to gender –based face processing to recognize and identify emotional state of facial expression. Indeed, in years back, Gagliardi et al. (2003) had found the convergent potential between the two disorders relating to this viewpoint. They used a naming task with participant in both group. Although one of the results was in line with Lacroix et al. (2009), interestingly the second result revealed that individuals with WMS provided correct response on gender-based face processing, significantly opposed to the group with ASD. The researchers described that lack of attention to faces present by individuals with ASD leads to the inability to response correctly. Their ideas can be considered logical if we relate to eye-tracking tasks describe by Riby and Hancock (2008). In fact, if it happens to be variation in the outcome upon one or two of them with WMS, it was probably associated with interference of their overtly sociable behavior as described by Bellugi et al. (1994).

What follow is an analysis of fear problem which has been identified on most children with developmental disabilities particularly in children with WMS and ASD. Many sort of fear are perceived mainly as a natural occurrence among those children. Some element of fear being reported decreases gradually through years while others remain the same. In fact, different rate of fear has been discovers in each disorders. Interestingly, though an individual with WMS are known to be highly sociable, they are more fearful compare to other atypical groups such as Down Syndrom, Prader Willi Syndrome and even Autism Spectrum Disorder (Dykens & Rosner, 1999). However, it was not that simpler to make the conclusion. One possible comparison that can be made is an analysis on several factors of the fears. Dyken (2003) revealed the fact that the highest frequently fears in children with WMS is fearful of injury and animals. It was opposite with children with ASD as fearful on animal become the least compare to other factors such as situational phobias or medical fears (Evans et al., 2005). Albeit the fact that these findings did not reveals simultaneously, it somehow implies the different from each disorders in terms of fear components. Agreed with both authorities, this particular aspect of fearfulness were predictably in correlation with individually behaviour symptoms. With deeper information such as diagnostic specificity and life experience, perhaps further research will making make more cohesive comparison and outcomes on this topic.

The potential of visual processing

Besides the divergent issues in language and communication development, as well as social performance, a different potential in perspective of visual processing between the two disorders was also observed. In fact, this topic is seen to be associated with others convergent issues that has been discussed earlier. In some reviews, researchers assumed that one possible explanation that an individual with WMS different from those with ASD is the ability on visual perception. The rationale for this is that almost individuals with WMS are associated with visual sensory problems particularly the stereoscopic perception. However, Atkinson et al. (2000) opposed the idea and stressed that there is no significant correlation between sensory visual problems as a cause to visual processing problems in individuals with WMS. The issue remains in debate until relevant findings with comparable evidence on neurophysiological perspectives are highlighted. When conducting a study towards

eight adults on each group of WMS and ASD, Grice et al. (2001) identified different patterns of oscillatory brain activities. The procedure involves face orientation detection. The result was obtained through electroencephalographic (EEG) signals which are recorded and measured as event-related potential (ERP). Even though, researchers did not found any specific difference in terms of face detection, they however have analysed successfully the difference of the γ burst pattern from the neuroimaging data that underlies deviant visual processing between WMS and ASD.

The differences on overall visual processing among them might be continually related to the visual-spatial in particularly. It has been described by Bryson et al. (2004) that visual-spatial is operated by neural structure that allow a person to develop visual attention to an object in certain location. Study by Riby and Hancock (2009) found the different outcomes between ASD and WMS. Both groups have dissimilar target items to be concern onto the stimulant images provided. While all participants were individually matched to chronological age (CA) and non-verbal ability (NV), the results showed that group with ASD spend longer time looking at the background or body area and less time looking at faces when stimulant picture was given, which is contradicted with responses showed by individual in group of WMS. They suggested that the deviance respective social phenotypes and sociocognitive abilities, affect on difference characteristic of the gaze behaviours between the WMS and ASD. However, in my views it is also possible to explain their findings in relation to the actual visual-spatial ability of ASD that to be known as different from WMS or other typical developing children. As confirmed by Paul et al. (2002), individuals with WMS have spatial deficits that affect on the poor performances during location matching task. Another study towards group of ASD revealed that, these population demonstrated better performance at identifying the orientation of simple and luminance-defined gratings rather than the complex one (Dowell & Wallace, 2009).

CONCLUSION

In summary, it has to be admitted that children with Williams Syndrome demonstrated some common character of Autism Spectrum Disorder and so of in vice versa. In early developing research, they found a lot of similarity in both disorders when concern on three general behavior such as language and communication, social interaction and intellectual ability. In fact, both children with WMS and ASD were associated with individually savant abilities that made them unique and special. However, the existence diagnostic test published and updating across year has narrowing the broad criteria of the disorder into groups and discriminate the overlapping criteria on both disorders. It have been proven divergent results appears in these two disorders when study investigated in detail in area of language and linguistic (including lexical capacity, morpho-syntax, speech fluency and pragmatic), socio emotion (including the study of eye-tracking, visual processing and emotion of facial expression) and intellectual ability related to IQ performance and learning ability. Both disorders were dissociated with evidence exposed from the advancement in genetic and neuro-science technology, as well as related psychological assessment and test.

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KNOWLEDGE, CHARACTER, PIETY: FOUNDATIONAL TENETS OF COMENIUS' MORAL EDUCATION

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Abstract: The goal of this paper is to present Comenius' foundational principles of moral education as it is outlined primarily in his didactic writings, and to show their relevance to contemporary pedagogical practice. The mutual inter-relation of knowledge, character and spirituality will be exposed, analyzed and explained. Comenius was a Czech 17th century Brethren bishop, philosopher and educator who is celebrated especially for his timeless didactic principles, which earned him the epithet "the teacher of nations."

Key words: morality, virtue, education, knowledge, humanity

1. Introduction: moral deficit

It seems that morality, resp. immorality has been a pressing issue in Comenius time as well as in ours. "Consider the state of public affairs" Comenius thus begins his famous analysis of the political situation of his time, which from the first glance amazes the reader with its relevancy (compare *Panegersia*, V: 28). Instead of wisdom and virtue Comenius must acknowledge the plethora of "ugly and unworthy excesses," which we as human beings allow in public affairs. According to Comenius "wolves, bears, tigers, snakes and other wild animals live with other members of their kind in unison. [...] But we, the rational creatures [...] behave worse than animals; either we continually push ourselves to governance, or on the contrary we avoid all government and thus present everywhere the attitudes that lead to disorder, and entangle ourselves in endless trouble." (*Panegersia*, V: 28-34).

Similarly, contemporary Western society faces "moral deficit", which call for action. Questions of moral literacy and education are moving from the margins to the center of social and educational attention.¹ A new demand emerged for schools to get involved in the moral education.² The pressing concern is not only about decent

¹ In this study I will work with the English term *morality* although in the Czech language there are three terms for this: *mravnost*, *morálnost* and *etičnost*. The etymology of these terms is different, but in common contemporary usage they are overlapping. Comenius used all three terms. When writing in Latin he often used the term *moralis*, in Czech he used the term *mravnost*, which corresponds to the contemporary use of the terms *morálnost* and *etičnost*. Comenius does not give clear definitions, but from his *Mudus moralis* (6th grade of *Pansofia*) it is evident that he considered ethics – "the wisdom of self-conduct" – to be part of morality.

² This is evident in the vast amount of literature that has been produced on this subject in recent years. Besides classics such as Piaget or Kohlberg, see for example: Lickona (2003), Schaps et al (2001), Berkowitz and Bier

socio-psychological training (habits, communication, cooperation, positive self-image, etc.), which should hopefully make human interaction more pleasant and easier. It involves more: in fact the discussion is about nothing less than a “physical survival of the human race” (compare Vacek, 2008). For the first time in history our planet is being threatened by its own (morally corrupt) inhabitants, and if things continue as they are, the planet will become uninhabitable. Gilles Lipovetsky has put it appositely: “the 21st Century will either be ethical or it will not be at all” (1999, p. 11).

With the revival of moral education however, questions emerge, the answers to which will set the nature and effectiveness of the whole moral education endeavor. On the one hand are questions about methodology, such as how to educate towards morality — by what method, in what form, using what means; on the other hand are questions of content — what to teach, what kind of knowledge, which skills, etc. And further there are teleological questions — what is the goal of moral education, and how should the properly-formed character be? Equally important are questions of philosophy and anthropology, which require a cultural-historical interpretation: where did the moral deficit come from, that drives people „to the brink of self-destruction“³? What are its roots, what is it based on? And also, more fundamentally: how is it that human nature needs nay moral formation in the first place? Why does it suffer de-formational tendencies? Why do people behave immorally? Why do human beings do inhuman things?

Educators have been seeking answers to these questions from time immemorial, and a wide variety of answers have unfolded out of the diverse points of view of the seekers. In this study I’m not making a claim to any kind of definitive or exhaustive answer to all these questions. But for pedagogical inspiration I want to restore the source of Jan Amos Comenius, and for a very good reason. Comenius, in his works (not only didactic), thoroughly dealt with the theme of education towards morality (and piety), and even regarded it as the key element of his pedagogical work — as we shall see. Furthermore, Comenius is known as a man of thoughtful vision, with which he foresaw many moral and educational problems and unceasingly wrote about them. Therefore in the following paragraphs I will attempt to analyze Comenius’ concept of moral education as it is outlined in his didactic and pansophic works, and to show its relevance for current educational and moral discourse. At the same time, I will try to explain why modern Czech Comeniological research biased by communist ideology has neglected precisely this aspect of his pedagogy.

2. *Methodus morum in specie*

How significant was moral education for Comenius is evident in the frequency he thematized it, explicitly emphasized, and repeated it in his various works. Morality as such is dealt with in his *Mundus moralis* – 6th grade of Pansofia (Comenius, 1992), and partial notes can be found in number of his works (*School of infancy*, *Via lucis*, etc.), but the educational aspects of morality are most thoroughly treated in his *Didactics* (both *Great* and *Czech*, briefly also in *Analytical didactic*). In addition to little notes spread throughout the books, Comenius devoted an entire chapter (XXIII in both books) to the question and named it “*Methodus morum in specie*”,

(2005), Hoge (2002), Čapek (2008), Lorenzová (2010), Olivar (1992), Vacek (2008), Erikson (1968), Fuchs (2003), Kohák (1993), Lipovetsky (1999), Perry (1970).

³ This problem is well treated from various points of view by Machovec (2006) and Palouš (1991) for example.

which M. W. Keating translates into English as “The method of morals.”⁴

Comenius begins the preface to this chapter by explaining that everything he had written to that point was only the “preparation“ or “beginning“ and not the main work. And it’s necessary to emphasize here that in the previous twenty two chapters he dealt with nothing less than the entire system of pedagogical goals, principles and methodology for the teaching of “science, art and language.” But the main work, according to Comenius, is the “study of wisdom, which elevates us and makes us steadfast and noble-minded – the study to which we have given the name of morality and of piety, and by means by which we are exalted above all creatures, and draw nigh to God himself.” These three purposes of the study of wisdom correspond to the triad of fundamental pedagogical goals the author introduced at the very beginning of his *Didactics*. There in the introduction Comenius clarifies that the teleological demand for knowledge, morals and godliness arises from an *a priori* anthropological nature, which means that to humankind it has been given 1) to be knowledgeable of things, 2) to have power over things and one’s self, and 3) to turn to God, the source of everything.⁵

All three areas belong inseparably together and would be “unhallowed” if they were separated.⁶ “For what is literary skill without virtue?” Comenius floats this rhetorical question and immediately answers it with a reference to the old proverb “He who makes progress in knowledge but not in morality ... retreats rather than advances. And thus what Solomon said about the beautiful but foolish woman holds good for the learned man who possesses no virtue: *As a jewel of gold in a swine’s snout, so is a fair woman who is without discretion*” (Comenius, 1926, ch. X, p. 17). Hence an education that wasn’t held together with morality and the “firm bond” of piety, would be a “miserable” education. A good education would instead develop humanity in all three of the above-mentioned dimensions. For “the whole excellence (*essence* in *Czech didactic*) of man,” Comenius explains elsewhere (Comenius 1905, ch. IV, p. 7), is situated in these three things, “for they alone are the foundation of the present and of the future life. All other things (health, strength, beauty, riches, honour, friendship, good-fortune, long life) are as nothing, if God grant them to any, but extrinsic ornaments of life, and if a man greedily gape after them, engross himself in their pursuit, occupy and overwhelm himself with them to the neglect of those more important matters, then they become superfluous vanities and harmful obstructions.”

The ultimate aims of moral education in Comenius’ *Didactic* are the so-called “key” or cardinal virtues of “wisdom, moderation, courage and justice” (*prudentia, temperantia, fortitudo, iustitia*), without which the structure of pedagogy would be “unfounded.” Comenius first briefly clarifies the individual virtue, and subsequently posits the method of its acquisition; together, these then form the crux of his methodology of moral education. Interestingly, he identifies six principles in *Czech Didactic*, and later in the *Great Didactic*

⁴ In most citations I will rely on Keating’s translation; my own translations from *Czech Didactic* will be indicated. Most of the citations I will make in this paper come from this 23rd chapter, therefore I won’t burden the reader with excessive references. I will only cite the reference when it comes from a different chapter in *Didactic* or from a different book.

⁵ Comenius (1926) submitted his pedagogical teleology in the 4th chapter.

⁶ Comenius (1905, ch.X) clarifies the theme of the inseparability of the individual areas of education in another chapter, explaining the so-called “universality” of education.

supplements and expands them to ten.⁷ For the sake of clarity I will only briefly summarize them here:

- I. Virtue is cultivated by actions, not by talk. For man is given life “to spend it in communication with people and in action.” Without virtuous actions man isn’t anything more than a meaningless burden on the earth.
- II. Virtue is in part gained by interactions with virtuous people. An example is the education Alexander received from Aristotle.
- III. Virtuous conduct is cultivated by active perseverance. A properly gentle and constant occupation of the spirit and body turns into diligence, so that idleness becomes unbearable for such a man.
- IV. At the heart of every virtue is service to others. Inherent in fallen human nature is enormous self-love, which has the effect that “everyone wants most of the attention.” Thus it is necessary to carefully instill the understanding that “we are not born only for ourselves, but for God and our neighbor.”
- V. Cultivation of the virtues must begin at the earliest age, before “ill manners and vice begin to nest.” In the same way that it’s easy to mold wax and gypsum when they’re soft, but once they’ve hardened it’s impossible to re-shape them, so also with men: most of one’s character is based on the first “skills” that are instilled in early childhood.
- VI. Honor is learned by virtuous action. As he learns to “walk by walking, to speak by speaking, to read by reading” etc., so a man learns “to obey by obedience, forbearance by delays, veracity by speaking truth” and so on.
- VII. Virtue is learned by example. “For children are like monkeys: everything they see, whether good or bad, they immediately want to imitate, even when they’re told not to, and thus they learn to imitate before they learn how to learn.” Therefore they need “living examples” as instructors.
- VIII. Virtue is also learned by instruction, which has to accompany example. Instructing means clarifying the meaning of the given rule of moral behavior, so as to understand why they should do it, what they should do, and why they should do it that way. Similarly, as “by a thorn a beast is pushed to move or to run, so a successful mind is not only told but also urged by gentle words to run to virtue.”
- IX. It’s necessary to protect children from bad people and influences. Inasmuch as a child’s mind is easily infected, it is necessary on the one hand to retreat from “evil society” and on the other hand to avoid lazy people. For the man who is idle “learns to do evil, because a mind cannot be empty, if it isn’t carrying something useful, it fills itself with empty, useless and vile things.”
- X. Virtue requires discipline. Inasmuch as fallen human nature reveals itself to be constantly “here and there,” it’s necessary to systematically discipline it.⁸

It is worth mentioning that Comenius is aware of the principle that a young age is well fitting for any kind of education or formation. In chapter VII, paragraph 4, he speaks almost like a developmental psychologist: “It is the nature of everything that comes into being, that while tender, it is easily *bent* and *formed* (emphasis mine).

⁷ There is a question as to whether the expanded version in the *Great Didactics* is actually clearer. The careful reader can’t escape the fact that some of the principles in the “great” version overlap each other.

⁸ Comenius presents a more detailed analysis of the method of discipline in chapter XXVI.

... It is evident that the same holds good with man himself,” continues Comenius in the following paragraph, and infers: “If piety is to take root in any man’s heart, it must be engrafted while he is still young; if we wish anyone to be virtuous, we must train (chisel, *otesat* in Czech Didactic) him in early youth; if we wish him to make great progress in wisdom, we must direct his faculties towards it in infancy...”

The inter-relationship of morality and piety can hardly be overlooked. It is evident throughout the book, but in chapter XXIII and XXIV Comenius makes it explicit. To stress his point, he accompanies the chapter on moral education with a brief chapter called *Methodus pietatis* dealing with “instilling piety” (XXIV). Here he acknowledges that piety is a special “gift of God,” but adds that God uses also the “natural agencies” of his grace and he therefore wants parents, teachers and ministers to be his “assistants”. This, then, leads to the conclusion that piety ought to be an integral part of family education as well as school education. Comenius repeats that by piety is meant the ability to “seek God everywhere, ... to follow him everywhere ... and to enjoy him always”⁹ and explains that the first happens through reason, the second through will, and the third through the joy of knowing him. There are three sources of piety given to people: God’s word, the world, and human beings (*Scriptura, natura, providentia particularis*); we are to read, observe and meditate carefully in order to draw from them (*Great didactic*, XXIV, 3-5). The growth in piety takes place through *contemplation, prayer* and *trials*, which make a believer to be a “true Christian”, (*Great didactic*, XXIV, 6-9). But piety must not be merely “a matter of words,” explains Comenius, but must be based on a “living faith” which is authenticated by adequate deeds (*Great Didactic*, XXIV, 19, 26, compare also *Czech Didactic*, XXIV, 14). Similarly, in *Mundus moralis* Comenius says that one of the key aspects of proper moral wisdom (*prudentia*) is pursuance, for “to know what ought to be done is not as difficult as doing it” (*Mundus moralis*, II, 5).

Since one of the key sources of piety is the Scripture, Comenius presents a strong case for its role in education (in chapter XXV). Rather than using pagan books (antique classics) in schools, he encourages using the Scriptures and argues for its superiority. That does not mean he would reject the classics as such, but he is concerned about the primary influence to which “young souls” are to be exposed. There is much wisdom in the pagan literature consistent with the Scriptures, which might be collected and used, and which Comenius frequently does in all his writings. But at the same time there is much “immorality,” “godlessness,” and “blindness” (*Czech Didactic*, XXIV, 8), which only a trained spirit can distinguish, and which is therefore not suitable for a youth. Some of Comenius’ statements concerning the classics such as Ovid, Lucianus, Diogenes and Aristotle led some interpreters (e.g. F. X. Šalda, 1987) to the conclusion that he was an “enemy of the antique” as such. That however is a very artificial reading of Comenius, for throughout all his work there are virtually hundreds of quotations from the classics used as validations of his arguments. The same attitude can be

⁹ This quotation comes from *Czech Didactics*. Sometimes the formulations in *Czech Didactic* are better, because Comenius wrote it for simple, non-highly-educated people. Compare this formulation with the one in *Great Didactic* (in Keating’s English): “We have already explained what we mean by piety, namely, that (after we had thoroughly grasped the conceptions of faith and of religion) our hearts should seek God everywhere (since He has concealed himself with his works as with a curtain, and, invisibly present in all visible things, directs all, though unseen), and that when we have found Him, we should follow him, and when we have attained him we should enjoy Him.”

observed also in Comenius' late *Věječka moudrosti* (*Ventilabrum*), where in paragraph 38 he shows in contemporary examples how pagan literature turned a number of people, including the Swedish queen Christina, away from the truth.

3. Comenius: not modern, yet modern

Can a contemporary teacher make any sense of this “old-fashioned” material? Is there a way in which Comenius' “method of morals” could enrich today's discussion about moral education? Clearly, his method is not a didactic methodology in the modern sense, it is not a description of a teaching techniques or strategies a teacher could follow in the classroom. Rather it is a set of principles or general rules, so a contemporary teacher-practitioner might be disappointed after the first reading. Nevertheless, the principles, as general as they are, contain an admirable amount of pedagogical, psychological and sociological intuition. It's fascinating that long before the possibility of experimental verification of his principles existed, Comenius saw and named such patterns inherent in moral education as: learning through practice, the influence of peer pressure, the principle of active participation, the principle of systematics, the principle of appropriateness, the principle of imitation, the significance of moral examples, and so on. Despite his archaic language, Comenius again and again amazes us with his timelessness and, as it were, “astonishingly prophetic” foresight, in the words of Jean Piaget (1993, p. 9). Comenius' ability to work out these educational principles surely earns him great admiration, because he arrived at them without the instruments of modern empirical science.

However, contemporary theory of education already knows all these principles. Comenius could never have imagined to what extent or how thoroughly his systematic questions about the formation of character have been examined and debated.¹⁰ Nor does Comenius bring anything new from the perspective of content: his program for cultivating the cardinal virtues goes back to the antique tradition, and thus has been dealt with many times, both before and after Comenius. In fact, I believe the main contribution of his work lies elsewhere.

I contend that the real challenge of his “method” is in his specific understanding of the relationship between the cognitive, moral and spiritual capacity of human beings. Comenius' theory implies the very close union of knowledge, morality and piety, but not, however, that they are an identity. Herein lies the greatest difference with the modern understanding of his ideas. The belief of the Enlightenment philosophers in the nearly omnipotent ability of reason altered the traditional relationship between *scientia* and *conscientia* (knowledge and conscience) to the extent that it began to be assumed that science and knowledge would become the automatic humanizing factor in the process of ennobling humanity (compare Bauman, 2004, p. 59). For only he who knows, has power.¹¹ And the one who “rightly” knows, will have the power to “rightly” act.¹² The experience of

¹⁰ As an indication of the massive research, see for example Čapek (2008), Vacínová and Langová (1994), Petty (1996), Vágnerová (1997), Fontana (1997), Vacek (2008), and Olivar (1992).

¹¹ Francis Bacon more than once repeats the idea that *scientia potentia est* (knowledge is power) in his then revolutionary reflections, whose specific methods also inspired Comenius. See for example Bacon (1974, p. 89, 186).

¹² Bauman in this context reminds us of Comte's dictum “to know, in order to have the power to act.” See Bauman (2004, p. 153).

history, however, shows that with humans it's more complicated than that. Once again Bauman (2004, p. 159) addresses the problem: "If we recall the perversity of the 20th Century in which science took an active part, the automatically-humanizing assumption of modern times will seem ridiculous and perhaps even criminally naive. Instead of gratefully giving ourselves over to the care of the bearers of knowledge, we tend rather to carefully watch their hands with ever increasing suspicion and fear."

The brilliance of Comenius' concept is revealed in the way he's able to sort out and explain the epistemological, moral and spiritual complexity of human beings. In contrast to the modern interpretation, Comenius never thought that knowledge-education could, in and of itself, lead to morality (and piety). In fact, it's exactly the opposite.¹³ It's precisely because knowledge cannot guarantee morality, that it's necessary to accompany it with moral education. When it isn't handled this way it goes against human nature — it's a "ripping apart" of the person, for it's given to humankind not only to be knowledgeable of things, but also to use that knowledge well (and by this, honor the Creator).

It should be mentioned that humanity is, in Comenius' understanding, thoroughly (and unquestionably) anchored metaphysically and theologically. Comenius takes for granted, for example, that a human being wasn't made "only for himself, but for God and his fellow man." Likewise, human nature isn't defined (even by an excellent observer) empirically, but theologically: man is the most perfect and excellent of all creation because he was made in the image of God, but he is also a sinner because he has denied that image. Out of this arises the need for a pedagogical formation of character — one's character is broken and cannot by its own efforts become good; on the contrary, it has a tendency "to become obstructed by empty, fruitless and vile things." Education is thus *educatio* in the original sense of the word: *e-ducare*, a leading out of, or away from, the hindrances of one's sinful self.¹⁴ Without any exaggeration, for Comenius education plays a soteriological¹⁵ role: it is a God-given means of the salvation of mankind. The ultimate goal is restoration of the *nexus hypostaticus* (personal relationship) between the human being and the Creator (*Great didactics*, I, 3).

4. Conclusion: practical educational implications

There is much thought-provoking material in Comenius' notion of moral education. In the conclusion I want to stress three practical inspirations which emerge from his *Methodus morum in specie*.

¹³ Here I argue with the interpretation of P. Menck, who in his essay on the formation of conscience (Menck, 2001) indicates that Comenius believed in a moral "automatism by which conscience follows knowledge - provided the knowledge is true." Menck extrapolates this conclusion from his interpretation of Comenius's illustrations in *Orbis pictus*. However I believe that's a hasty conclusion which doesn't take into account the other didactic works of Comenius. If Comenius really believed that morality appeared automatically with correct knowledge, he would logically have focused his *Didactics* only on the cognitive level of learning. But the fact that, next to rational education Comenius insists on the learning of morals and posits systematic principles, speaks against Menck's assumptions. For further details of Menck's argument see pp. 261-275.

¹⁴ Cf. R. Paluoš's notion of *educatio* in Paluoš (1991, p. 63ff) or Wright (2004, p. 130-131).

¹⁵ Soteriology is a theological discipline which deals with questions of salvation.

First, educating in knowledge without morality is dangerous. For knowledge – as well as anything else – might be both used and abused. A person who is well *informed*, but not morally *formed* is merely a “useless encumbrance on the earth”, according to Comenius, even a “misery” — to oneself as well as to others. For the greater the knowledge, the worse it is when it’s used for evil. Therefore Comenius contended that an educated but immoral humanity goes backwards rather than forwards, degenerating. On the other hand, his “workshop of humanity”¹⁶ deliberately aims for regeneration, that is, for the restoration of every dimension of humanity — reason, character and spirit which is to say, knowledge, morality and piety.

Second, educating in morality without piety is incomplete. There is no doubt one can be led to behave morally without any reference to any metaphysical instance or authority. Moreover, moral behavior in itself brings a special kind joy and fulfillment to its agent. But if Comenius is right in his anthropology, that is – let me remind the reader – if human beings are endowed with the 1) rational, 2) moral and 3) spiritual capacities, an education which would neglect any of these dimensions suffers incompleteness. If the *nexus hypostaticus* – the personal relationship to the Creator – is an essential part of human nature, it has to be part of human education. Without the spiritual, knowledge becomes pointless, morality becomes moralization and education becomes spiritless. A personal relationship to the Creator, on the contrary, is what makes morality meaningful “even if no one is watching,” according to Comenius.¹⁷

Third, morality (as well as piety) is both teachable and learnable. This is obviously closely related to the previous point and has been already alluded to above, but let me emphasize it as I conclude. What was implicit in *Didactics* is made explicit in *Pampaedia* (Comenius, 1992). Here in chapter III, paragraph 46 Comenius presents again the argument for the necessity of leading towards morality and courtesy, and the following paragraph – dealing with “instilling piety” – begins with the words: “For it is evident ... that also piety is teachable...” (III, 47). Comenius of course recognizes that spiritual regeneration is the necessary starting point given by the grace of God. But grace does not “abolish” human nature, on the contrary, grace “restores” and “perfects” it.¹⁸ Therefore, it is legitimate to use the natural instruments when leading towards morality and piety. And to Comenius it is evident that nature teaches that morality and piety will be best instilled by:

- 1) Providing a good and living example to children, for imitation is one of the key elements of human learning.
- 2) Providing an adequate explanation of every rule or principle that is to be obeyed, for it is good for human action to know and understand why we do what we do.
- 3) Providing an opportunity for everyday practice, because morality and piety are not only a matter of knowing, but also of doing.¹⁹

The whole process must never be “violent” or “coarse,” on the contrary, it must be “gentle,” “free” and “smooth” (cf. III, 46, 47). For that is the way God himself relates to people, he brings no one to himself violently, against his or her will (cf. *Mundus spiritualis*, VII, 2). To make the pedagogical application as clear as

¹⁶ Comenius often uses this expression (*humanitatis officinae*) to describe his idea of school. Keating (Comenius, 1896) translates it as the “forging-place of men.” See also Comenius (1905, XI, 1).

¹⁷ See *Mundus moralis*, III, a sub-chapter on dealing with ambition (*ambitio*), paragraph 4.

¹⁸ For more details on the subject of regeneration see chapter VII in *Mundus spiritualis*.

¹⁹ Notice that in both paragraphs (on morality and on piety) Comenius follows the same threefold structure of instruction – example, understanding, practice.

possible, let me rephrase Comenius' words: Teachers, parents, educators, it is possible to raise good and godly children. This is how to do it: 1) be good and godly yourself, 2) let them see or understand the beauty of the good and the godly, 3) let them do or experience what is good and godly.

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LEARNING TEACHING: A VOYAGE OF DISCOVERY

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Abstract: *The voyage of discovery is not in seeking new landscapes but in having new eyes ~ Marcel Proust.* This paper is a reflection of a teacher's experience of becoming critically reflective of his/her teaching practices. The teaching practices were triangulated through four lenses as proposed by Brookfield (1995): 1) autobiography as a learner and teacher, 2) colleagues' experiences, 3) students' eye and 4) theoretical literature. The first lens is a written reflective task on the journey of being a learner and now a teacher. This lens proves that one's teaching practices are linked to how one was taught as a student. The second lens is the non-evaluative feedback provided by peers about the teacher's teaching practices. The third lens is the feedback provided by students on certain specific concern that the teacher had highlighted. The final lens is the process of linking the practical aspects with theoretical aspects. Each lens reinforces one another. Consequently, this process helps one not only to become critical but also reflective of the teaching practices. Through this process a clear link was identified amongst the four lenses. The new perspective gained from this experience is indeed very crucial for all the academicians as it is a process of renewal of teaching practices by identifying discrepancies or conformities amongst the four lenses.

Keywords: Critically Reflective, Teaching Practices, Feedback

INTRODUCTION

The researcher/teacher examined her teaching practices in her Communication Skills class which consist of 70 students from the school of business. This subject is catered for second year students from the undergraduate program. The learning abilities of the students usually range from proficient learners to less proficient learners although they are all placed in one class. At times, the teacher finds it is difficult to control the pace of learning because the less proficient learners may be slower in understanding some concepts compared to the proficient learners. Although the teacher has been teaching for the past 8 years in a higher education setting, she always feel that teaching mixed ability students in one class is challenging especially, to keep everyone in the class engaged. The teacher understands that she has to guide and give the students the best learning curve so that the teaching is challenging and at the same time attainable. In order to provide the best learning point for every lecture and tutorial, the teacher needs to work with the students very closely by analysing their needs, weaknesses and strengths. Triangulation of the teaching practices using Brookfield's Four Lenses was a good opportunity for the teacher to review the teaching practices and at the same time address her concern about student engagement in classes.

The Four Lenses

The teaching practices were triangulated through four lenses as proposed by Brookfield (1995): 1) autobiography as a learner and teacher, 2) students' eye, 3) colleagues' experiences and 4) theoretical literature. This process helps the teacher not only to become critical but also reflective of her own teaching practices continuously. As a clear link is identified amongst the four lenses, a new perspective of teaching practice is gained. This experience is indeed very valuable for the teacher as it is a process of renewal of teaching practices by identifying discrepancies or conformities amongst the four lenses. Next sub-sections explain in detail each lens.

1. Learning Autobiography

Writing the learning autobiography was the most emotional lens among the four lenses. This is because the teacher had to recall her past experience and reflect about herself as a learner and now a teacher. She realised that the expectation she has on the students, the principles that she believes in as an educator, and the research area that she is interested in are all based on her past experience as a learner.

The *research area* that she has been focusing for the past 8 years is on less proficient language learners. As a language teacher, she believes, this is the group of learners that should be given more attention in order to make them aware of the various ways of learning languages effectively. In comparison, proficient language learners generally use strategies that are appropriate to their own stage of learning, personality and age (Oxford and Nyikos, 1989). Therefore, it can be concluded that proficient language learners seldom face difficulty in language acquisition because they can conjure a set of pattern or strategy appropriate to their needs.

After the process of writing the learning autobiography, the teacher found the reason why she has been trying to find solutions for less proficient learners. In fact, it is because the teacher was an unsuccessful learner previously until she became conscious of her own learning. In view of this, Schmidt (1990) claims that conscious learning is a necessary condition for every aspect of learning. Therefore, when learners become aware or conscious of their level, they will take more responsibility in learning – this was evident in the teacher’s life.

Consequently, because of her learning experience, the *principles* she believes in as an educator is a learner has to be aware, conscious and responsible of his or her own learning in order to be a successful learner. Therefore, the teacher constantly try to imply these principles to the students in order for them to become successful learners as well.

2. Colleagues’ Experiences

This lens gave the teacher the experience of being observed without being evaluated. In the past, every time the teacher was observed, it was for department appraisal purposes. The real benefit of peer observation could not be realised as there were issues of inequality, judgmental and performance. However, through Brookfield’s Four Lenses, peer observation was effective as emphasised by Gosling (2000), ‘it can be a powerful learning experience’. Evidently, even more effective because of the teacher’s supportive and helpful colleagues.

It has always been the teacher’s belief that if the students want to be more aware, conscious and responsible of their learning, then they should be more engaged during the class. This is not easy to achieve especially when large number of students are placed in one class. Therefore, student engagement was the aspect the was highlighted to the teacher’s colleagues when they observed her.

Although, student engagement was the concern, the teacher realised that two of her colleagues who observed her said that the student engagement increases as time passes by. However, there was new information that emerged from the peer observation. One of the colleagues shared with the teacher something she never knew she had problem with during her 8 years of teaching. The colleague mentioned that the teacher becomes very tentative when giving feedback to the students during lecture. The following is an extract of the colleague’s point of view:

“It was a good effort made by the teacher to use various questions to increase students’ engagement. However, it is noticed that the teacher’s responses to her students answer were at times not clear. When students gave the wrong answer, instead of saying the student’s answer was wrong, the teacher would continue probing. When students gave the right answer, the teacher would acknowledge it by using the answer to relate to the given concepts. It would also be acceptable if the teacher acknowledges students’ correct answer by praising them or telling them that their answers were correct.”

After a discussion with the colleague, the teacher realised that she provides feedback tentatively all the time especially when having open discussions with students in the class. After some reflection it was understood that it is also related to the teacher’s past experience as a learner. When the teacher started her tertiary education, she became more confident which led her to become more aware and conscious of her learning and eventually she became a successful learner. Therefore, the teacher believes that when a person is confident, he or she will learn better and this is what the teacher wants the students to achieve. The teacher did not want them to feel embarrassed or demotivated in the class. Perhaps, this could also be the reason why the teacher recently embarked on her journey to find ways to motivate unsuccessful learners through Neuro-Linguistic Programming (NLP). According to Love (2001), learners who do not perform well often carry feelings of inadequacy into subsequent testing experience or other aspects of their academic performance. Eventually, this feeling will perpetuate and persist in every phase of their lives. The teacher did not like her students to be feel less confident in the class, and therefore it resulted in her becoming very tentative in providing feedback. Consequently, the tentative answers and feedback have been a hindrance for students’ learning because they have to guess the teacher’s feedback all the time. As highlighted by Eraut (2006), feedback is important especially in higher education context:

“When students enter higher education . . . the type of feedback they then receive, intentionally or unintentionally, will play an important part in shaping their learning futures. Hence we need to know much more about how their learning, indeed their very sense of professional identity, is shaped by the nature of the feedback they receive. We need more feedback on feedback.”

After the colleague’s feedback on the way the teacher provides feedback to her students, the teacher was having a difficult time to change the fossilised habit. She would recall what her colleague had mentioned but she would go back to the same habit of being tentative because she felt comfortable doing that.

3. Students’s Eye

Then another lens proposed by Brookfield was experimented. This helped the teacher to understand students’ perspective of her teaching. There were three surveys that were carried out based on the teacher’s teaching. The first one was a general one which asked students to write one aspect of teaching that the teacher should stop, start and continue. The results revealed that many students liked the way the teacher taught them and requested her to continue the teaching approaches. This actually reconfirmed the teacher’s colleagues’ point of view on the students’ engagement which was initially the concern of the teacher.

However, the teacher had some students who highlighted about the way she provide comments. The students wanted more comments and more instantaneous feedbacks. It dawned on the teacher then that she has to consciously do something about the feedback process. The students’ feedback on the teacher’s teaching practice has now helped her to realise that there is a new area of concern which was also highlighted by the colleagues – providing appropriate feedback.

The teacher then started to consciously comment on the students’ answers during lectures. She used phrases like ‘good’, ‘that’s correct’, ‘that is not right’, and ‘this is the correct answer’. She had to think about words and phrases to use before going for classes which was not easy. However, with conscious reminder the teacher managed to change some of the feedbacks. She also provided immediate feedback after speech presentations and provided consultation after the second test for that particular semester.

The second survey was conducted three weeks later by the department and she could see an improvement. 80% of the students agreed that they received helpful feedback from the teacher, 15% were neutral while the remaining 5% did not agree. Within a week later, on the last day of the class for the semester, the teacher conducted another survey. The result was almost the same although there was an interesting development to it. 80% of the students liked the feedback session provided by the teacher but this time 20% were neutral – no one disagreed.

From this lens, it is concluded that now the teacher has to start reviewing and researching on the aspect of providing appropriate feedback to students.

4. Theoretical Literature

The initial concern the teacher had of her teaching practice was ‘student engagement’. However, the emerged concern after the peer observation and student evaluation is ‘providing appropriate feedback’. For that reason, this lens (theoretical literature) would be the footing to assist the teacher in providing appropriate feedback to students in higher education.

Through this lens, it is discovered that student engagement and providing appropriate feedback are inter-related. One of the techniques to maintain student engagement is through providing appropriate feedback. In view of this, Black & William (1998) mentioned that the provision of challenging assignments and **extensive feedback** lead to **greater student engagement** and higher achievement.

Now, everything can be linked together, and there is a reason why the new concern emerged. It is actually not new but part of teacher’s concern which is student engagement. All the lenses proposed by Brookfield (1995) are now linked to each other.

Hattie & Timperley (2007) suggested an approach of providing feedback by identifying three questions – 1) Where am I going (goals), 2) How am I going? And 3) Where to next? In the first question, students have to know their goal and convey it clearly to their teachers. This will assist the teachers to provide feedback based on the students’ goal. The next questions is based on how well the students are progressing towards the goal. Tests do not have to be the only feedback the students should receive. The last question leads to greater possibilities of

learning. This could be beyond achieving the goal that was set. This approach helps the students to become self-regulated learners which refers to self-generated thoughts and behaviours that are oriented towards the achievement of their goals, with the interaction of environmental conditions (Zimmerman, 2002). By analysing and setting students' own desired outcome (goal), it would be easier for the teachers and students to be in tune with academic progression. This is supported by Biggs (2003) in which he suggested constructive alignment. He said that the teaching system, teaching methods and assessment should be aligned with intended learning outcome so that students have no other choice but to learn what they intend to learn. Therefore, by setting students' own goals and conveying it clearly to the teachers, both parties could work towards providing appropriate feedback. This eventually leads to greater student engagement because the choice of the goal/desired outcome/ intended learning outcome is theirs.

In fact, suprisingly, this approach also leads to the principle that the teacher believes in teaching that students should become more aware, conscious and responsible of their learning in order to be successful learners.

It is believed that with appropriate feedback by teachers, students will understand what they are lacking in achieving the goal and progressively work towards achieving it. Sadler (1989) reinforced that it is closing the gap between where the students are and where they are aiming to be that leads to power of feedback. The review of the teaching practices through this lens has indeed given a new research gap to fill in – providing appropriate feedback.

CONCLUSION

Brookfield's Four Lenses, indeed, has given the teacher a truly fresh perspective and she is amazed how much everything links to each other: from the learning experience, the teaching principles that she believes in, the research needs to the current teaching practices from the view of colleagues, students and literature. This exciting and revealing experience has given the teacher an opportunity to fill in a new research gap. The future research plan is to continue finding ways to improve the way to provide feedback to the students especially in higher education setting. Every academician is encouraged to triangulate his/her teaching practices because the lenses proposed by Brookfield assist in understanding the teaching practices from different perspectives.

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LOOKING THROUGH THE LENSES OF OTHERS: EXAMINING THE DIVERSE REFLECTIONS OF FOUR NEWLY QUALIFIED TEACHERS

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Abstract: Our increasingly globalised world around is presenting us with new challenges amongst which is the increasing heterogeneity of students in our classes. In Malta, teachers are approaching this phenomenon with a developing sense of understanding diversity and a genuine commitment to reach all students under their care. The author sought the experiences of four Newly Qualified Teachers in their first two years of teaching and examined their perceptions on multicultural education and the practices they applied and concomitance with academic literature. The social constructivist approach to the study revealed that teachers believed in the need for more training on Multicultural Education and on the ongoing communication with parents and students. They also insisted that teachers read academic literature to prepare themselves to embrace all students irrespective of background and embark on setting of a unit on Multicultural and Diversity Education within the Education Division in Malta.

INTRODUCTION

In an increasingly globalised and multicultural world we frequently have the opportunity to interact with others who offer a cultural heritage which is different from ours. Over the past twenty years, Malta has witnessed a steady and unprecedented rise in opportunities to interact cross-culturally due to a number of factors. Amongst which is migratory flows (both legal and irregular), mixed marriages, student exchanges and the successive enlargements of the European Union. These have brought peoples and cultures into continuous contact and have in a way, pushed Maltese society to undergo a flux of change for which educators have often complained as being too fast for them to absorb.

During 2012/2013, 4.3 per cent of total students enrolled in formal education were foreigners. This results in an increase of 0.6% over the previous year. The highest proportion of foreign students was noted in tertiary education (5.9%), while the largest increase (1.3%) occurred in post-secondary vocational institutions. The majority of foreign students were EU nationals (NSO, 2014).

Certain areas within the Maltese Islands typically tend to host higher proportions than this. A case in point is St Paul's Bay's Primary School in the northern part of the island in which more than 25% of its students are foreigners. Such numbers are bound to rise in the very near future as the Maltese population becomes more diverse.

It can therefore be safely said that the Maltese student population is becoming increasingly multicultural with emphasis on the education for diversity taking its toll in a number of initiatives by the Maltese Government in an attempt to address diversity challenges arising from the social interactions between Maltese and foreign students. The increasing diversity of students in Maltese classrooms can be termed to be a two pronged situation. On one side it presented itself as an opportunity for Maltese students to weave new relationships arising from cultural interactions while on the others it has presented new and unprecedented challenges for educators who are clearly striving to equity education for all students under their care.

Issues of race, gender, ethnicity, differing academic abilities, linguistic diversity, socioeconomic statuses, family structures and a multitude of other factors come into play when teachers attempt to plan their journey into the intricacies of cultural complexities – hence the necessity to engage in deep reflection to be able to embark all kids on board. According to Congress and Lynne (1994), the variety of sociocultural groups is leading to feelings of insecurity, difficulty in social identity, sadness and feelings of alienation. The NAEYC (1996) further points out that children are struggling to adapt to multiple languages, uphold their traditions and foster attitudes which are concomitant with family culture.

Teachers note that every cultural group has different patterns Each sociocultural group has different patterns of behaviour, thinking, values, ideas, and symbols which are transmitted from generation to generation through culture (NCSS, 1992).

When these patterns are brought in close proximity with each other some difficulties in inter-group interaction might arise. Understanding and working upon such differences will serve as a springboard for both pre-service and in-service teachers to embark on culturally mediated processes aimed at proliferating the principles of multicultural education.

DEFINITIONS AND PRINCIPLES OF MULTICULTURAL EDUCATION

Banks (1995, p.3) eloquently states that “a major goal of multicultural education is to reform the school and other educational institutions so that students from diverse racial, ethnic, and social-class groups will experience educational equality”. Hence Multicultural education is an equity philosophy geared towards helping students from different backgrounds to get along better together, to feel positive about themselves and others and feel enriched by each other’s contribution to their immediate classroom environment.

Manning and Baruth (1996) focus on learners and their quest towards common democratic values the state that multicultural education

is designed to teach learners to recognize, accept, and appreciate cultural, ethnic, social class, religious, and gender differences and to instill in learners during these crucial developmental years a sense of responsibility and a commitment to work toward the democratic ideals of justice, equality, and democracy (p. 3).

Baker (1994) further insists that understanding is crucial when studying diversity. Educators need to shed off stereotypes upon particular cultural groups so that they could better appreciate, embrace, trust and feel confident with the cultural diversity among them.

Gordon and Roberts (1991) adopted a more pragmatic stance in their understanding of Multicultural diversity in the classroom. They enacted a series of principles which are productive both for teachers and for students in their daily interaction in the classroom. The principles are as follows:

1. Content taught in the classroom should be inclusive of cultures and based on the latest body of academic research. Lessons need to be inclusive of the multicultural “weight” and also of divergent and opposing opinions.
2. Content taught in the classroom needs to be clearly set around a context of space, time and location which is conducive to the learning needs of the students
3. Multicultural perspectives need to be evident across all areas of the curriculum.
4. Content matter needs to be delivered as “socially constructed” rather than as an absolute truth, as there are different “truths” which need to be explored.
5. All students carry a bag of cultural wealth in the classrooms. Hence teaching of subjects needs to be scaffolded on the experience and knowledge which is already present in the classroom.
6. Different pedagogies should be enacted in the classroom based taking note of the different learning styles of the students.

RESEARCH QUESTIONS

The purpose of paper is to study the understanding of Diversity and Multicultural Education as perceived by four Newly Qualified Teachers (NQTs) within their first two years of their teaching experience. The objective of the study is to delve in teachers’ beliefs, knowledge, attitudes and skills involved in their everyday practice of the principles of diversity in their lesson preparation, during classroom duties and after school hours. This study aims to examine critical epistemological moments during teachers’ day to day experiences with a focus on “How do Newly Qualified Teachers perceive multicultural education in their everyday practise?, How do they apply the principles of Multicultural Education? and What do they think is needed to encourage educational stakeholders to adhere to and implement these principles?”

THEORETICAL UNDERPINNINGS

The study employs the social constructivist body of knowledge as the framework upon which findings and analysis are interpreted. Social constructivism (developed by Vygotski, 1978) is based on interpretation where knowledge is generated through involvement with content instead of imitation or repetition (Kroll & LaBoskey, 1996).

It affirms that knowledge therefore requires the individual to infuse past experiences, personal views and cultural background and construct an interpretation of it thus forming their own constructs as new knowledge

develops. Hence, researchers employing this approach are driven by a conscious effort to move from 'traditional, objectivist, didactic, memory-oriented transmission models' (Cannella & Reiff, 1994) to a more student-centred approach.

Also, social constructivism provided the researcher and participants an opportunity to provide 'multiple representations of reality' (Jonassen, 1994). Hence it represents the complexity of the world as seen by various subjects depending on their role as constructors of the said reality. Social constructivism also encourages thoughtful reflection on experience as seen through the lenses of participants.

METHOD OF RESEARCH

The Descriptive case study method was deemed to be most appropriate for the study. Descriptive case studies allow for information collected without changing the environment in which the study is being conducted. They allow provide opportunity to demonstrate associations or relationships between things in the environment in which research is taking place. A descriptive case study is useful to present basic and rich information in educational areas where little is known.

The interviewees are focused on each participant's perceptions and practical knowledge of diversity, including their personal beliefs, values, and knowledge regarding diversity stemming from their personal experiences in the school and the larger sociocultural context. The interviews were semi-structured in order to have conversation with participants exploring the research interests broadly. Each interview session lasted approximately one to one-and-one-half hours. The interviews were audiotaped in order to accurately record the language of the interviewees.

PARTICIPANTS

A convenience sample consisting of four NQTs during the first two years of their teaching careers and working in primary education was used in the study. Maria, Christina, Bella and Ritianne* were selected on the basis of being well known strong "advocates" for multicultural and diversity education in their respective schools. They all claim that they wouldn't be able to live without teaching young kids. They also highlighted the importance of love and affection as part and parcel of the teaching process and also the importance of being able to bridge across cultures. They iterated that it is really difficult to get rid of prejudices which we might have somewhat inherited from our cultural upbringing. They also recognized the importance of respect when working with children and parents, and also recognized the need for more training in the aspects of teaching for diversity. They were especially keen in noting the recurrent and persistent need to develop multiple ways of reaching different students academically, personally and socially.

DATA ANALYSIS

Data Analysis is a process of inspecting, cleaning, transforming, and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making (Wikipedia, 2015). Therefore Data Analysis attempts to make sense out of data and through deliberate processes such as consolidating, reducing, and interpreting, the researcher interprets meanings emerging during the analysis.

The four interviews were collected and transcribed. Using ATLAS.ti, a qualitative Data Analysis software, all data were analyzed looking for patterns and themes concomitant with literature on diversity and multicultural education.

Research Findings

Research Findings

This section aims to provide a deep understanding of Diversity and Multicultural Education as experienced by four NQTs in their first two years of teaching in the primary sector of Education in Malta. The themes which emerged from the discussion were 1) The need for courses with special focus on Multicultural and diversity education, 2) The importance of communicating with parents, teachers and students to understand the diverse needs of the students, 3) the importance of researching and reading on topics related to the education of students from different cultures, equity, gender issues, fairness, race and democratization, and 4) the set up of a unit made up of teachers, educators and students which serves as a consultative committee whenever concerns arise on diversity and multicultural education; and 5) the importance of field experiences in teacher preparation programs.

1) The need for courses with special focus on Multicultural and diversity education.

Bella strongly believes that the local authorities need to give more attention to diversity and multicultural education. She eloquently states that educators still think of diversity and multicultural education as an "additional burden" to the curriculum. She said that most teachers feel that diversity is more about "preparing

more and more to meet the diverse needs of pupils”. This is certainly not in line with the notion put forward by Banks that multicultural education is about ‘reform (ing) the school and other educational institutions so that students from diverse racial, ethnic, and social-class groups will experience educational equality’. Bella insists that courses need to gear both teachers and parents to understand the true meaning of multicultural and diversity education. Bella’s attitudes and perceptions on Multicultural education were mirrored by Christina who added that teaching for diversity poses serious challenges for educators as they need to further enhance their preparation but would mostly need to change their whole philosophy of teaching. Maria and Ritianne stressed the need for a more practical approach to the teaching for diversity. She simply feels that not enough is being done to help parents, administrators and teachers to help them prepare for diversity. She recounts that the training she has received consisted in dealing with the basic issues of identity, self respect, self-awareness, dealing with prejudices and racism which, in the way she views things, is not enough and is devoid of the true meaning of multicultural education.

2) *The importance of communicating with parents, teachers and students to understand the diverse needs of the students.*

Maria was in full agreement with Ritianne’s assertions and stressed on the importance of providing a ‘fair voice’ to each and every student. She points out that for a classroom to be truly inclusive of all cultures care needs to be taken to establish safe communication patterns and trusting atmosphere among all stakeholders in education. Communicating with parents is an essential pre-requisite for cultural inclusivity to be fostered. According to Christina if students, parents and teachers feel safe only if they “gang only with those of similar cultures” how can the principles of multicultural and inclusive education be put onto practice. She said that in these first two years of teaching she had to research all about traditions, holidays and costumes. Bella iterated that she had to learn about Kwanza and the Diwali festival and the “red tape” she had to face to convince the school administration to celebrate the festivals in her classroom. Ultimately she has done so in a discrete manner. This means that she was able to deliver content in a ‘socially constructed’ (Gordon & Roberts, 1991) manner, portraying different rather than as an absolute realities of the same event.

3) *the importance of researching and reading on topics related to the education of students from different cultures, equity, gender issues, fairness, race and democratization.*

Maria insisted that the way we (as Maltese) look at democracy in itself needs to be redefined to include multiple perspectives. According to Maria it is not enough to work hard in schools. It is society at large which needs to change attitudes to include other cultures. On similar lines Bella claims that when she thinks about *Diversity and Multicultural education* the first thoughts which spring up are fairness and equity. Being a reflective practitioner, i.e. “actively taking deliberate time to think and reflect on the lessons practical and inherent implications on fairness and equality should be the hallmark of every practitioner in the classroom” (Bella’s own words). This is concomitant Manning and Baruth (1996) stress on democratic values ‘teach learners to recognize, accept, and appreciate cultural, ethnic, social class, religious, and gender differences and to instill in learners...a commitment to work toward the democratic ideals of justice, equality, and democracy’ (p. 3).

Christina commented that she feels surprised that notwithstanding the fact that schools are nowadays more exposed to multiethnicity, such exposure is only narrowly viewed by teachers and is frequently governed by misconceptions and misattributions. She believes that such misattributions are the root cause for unfairness and racism in classrooms and schools.

4) *the set up of a unit made up of teachers, educators and students which serves as a consultative committee whenever concerns arise on diversity and multicultural education arises.*

Both Bella and Maria insist that not enough is being done to promote the principles of multicultural and diversity education. Also according to Christina teachers seem to be in an unwitting process to impose their own culture onto their students. This seems to suggest concordance with NAEYC (1996) with points out that children are struggling to adapt to multiple languages, uphold their traditions and foster attitudes which are concomitant with family culture. According to these three teachers there has to be a unit within the Educational Directorate in Malta which promotes the principles of multicultural and diversity education. Ritianne also adds such a unit would assist in building expertise and knowledge on diversity education and set benchmarks on teachers as to skills, knowledge and aptitudes necessary to foster a truly inclusive multicultural community in the classroom. It would assist in the understanding of the cultural values to which various ethnic groups adhere to. A unit set up for the purpose of multicultural inclusion would provide scholarship towards the understanding of cultures. Support of media such as podcasts and DVDs teachers would be able to scaffold knowledge and include in lessons planning and execution. Ritianne also insisted that the input of multiethnic parents in the

classroom should never be underestimated as parents possess a baggage of ethnic wealth which is essential to our understanding of multicultural education.

5) The importance of field experiences in teacher preparation programs.

All four NQTs stressed the importance of student teachers being given the opportunity to work with students of multicultural origin during the initial years of teacher preparation programs. They stressed that knowledge and awareness about multicultural education on its own is not sufficient but field practices are needed. They concur that real teaching opportunities are of paramount importance if a student teacher is to develop in depth awareness about diversity in the classroom. By being placed in the reality of teaching a multicultural class, they will have the opportunity to experiment different techniques derived from academic literature. Capella-Santana (2003) argues that field experiences have the power to transform teaching practices while Philips (2003) notes that such transformations require continuous reflections and not “one workshop formats” or “one time lectures” (p.181).

CONCLUSIONS AND WAY FORWARD

The convenience sample of four newly qualified teachers provided the advantage of indepth scholarship on the knowledge, attitudes, beliefs and skills sets necessary for teachers to teach in a multicultural context. The disadvantage is that findings cannot be generalized as representative of the whole population of NQTs. The interpretation of results does not, in any way construe that efforts are not being sustained in assisting teachers to develop pedagogies consistent with the principles of multicultural education.

The Social Constructivist Philosophy allowed the researcher to engage in thoughtful reflection on the experiences as seen through the lenses of the participants. It is clear that today's classrooms are rich in cultural diversity and this is a factor which needs to be incorporate in the everyday planning of teachers and all stakeholders involved in the educational experiences of our students.

In order to fully embrace multicultural education certain subjects taught in our classrooms need to be looked upon from diverse perspectives. For example social studies needs to be revisited to include multiple perspectives. We are all aware that cultural and historical facts have their own twists and turns and there is no unique set of events which shapes behaviours and understanding. Thus students will be exposed to diverse perspectives liberating them from feelings of cultural superiority or inferiority.

When topics such as traditions, festivities and normative behaviours are discussed these should be introduced in comparative and open manner so that students can learn and appreciate similarities and differences among various cultural groups. By becoming knowledgeable about particular ethnic groups, students will be able to create and interact into a climate of mutual sharing and a spirit of rich and peaceful co-existence.

Communication within the school environment needs to be enhanced through the use of symbols from the various ethnic groups present in the school. For example signposts around the school need to be printed in different languages – a clear indication of a sense of equality in language and expression. Students are more likely to engage in learning when they feel accepted and valued by their surrounding environment.

Group-work in the classroom should have the deliberate aim to include as many perspectives as possible whilst providing opportunities for students to establish positive interpersonal relations with all their class peers.

Teachers need to be trained to look beyond what is depicted in books and elicit from students the hidden cultural heritage which is present in the classroom. Such enrichment needs to be further enhanced through the involvement of parents, Senior Management Teams and the community at large. This sharing of cultural heritage may be pursued through a variety of means namely auditory, visual, kinaesthetic, experiential and through interaction with participants. Pedagogies need to be developed keeping the tenants of Multicultural education as the primary focus.

Malta is rich in its historical and cultural heritage. This should provide scope and opportunity for parents, especially those who do not come from the dominant culture, to be more participative in field trips which complement classroom activities insofar as they can contribute a diverse perspective to the experiences enjoyed by their children. Such field trips include but not limited to museums, outdoor playing areas, historical places, monumental sites etc.

Finally the set up of a unit within the education division in Malta needs to be set up with sole aim of supporting initiatives aimed at developing pedagogies which are inclusive of different cultures. Teachers need to read academic literature with emphasis on Multicultural Education in order to be able to expand their knowledge and

be able to transmit positive attitudes, extensively to acquire knowledge about ethnic diversity. Bella, Ritianne, Christina and Maria are excellent examples on whom to build diverse learning communities. With the help of students and their families, they managed to build a knowledge based community by collecting books, videos, newspapers, magazines, regalia, and cultural artefacts. This is helping students and their families to expand their knowledge on the different ethnic groups present in their classrooms, with positive impacts being observed in the whole school community and beyond.

* Not their real names

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PROBLEM SOLVING AND ITS TEACHING IN MATHEMATICS

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Abstract: Purpose of this study is to determine problem solving skills of primary mathematics preservice teachers in mathematics teaching. This research was carried out with the 3rd year students studying in the department of elementary mathematics teaching at Samsun Ondokuz Mayıs University. Research method was determined as case study, one of the qualitative methods. In the study, the students were taught for 13 weeks (39 hours) Polya's (1945) problem solving stages that are composed of 4 stages and the problem solving stages were introduced in order to improve their problem solving skills. In the research, two problems developed by Posamentier and Krulik (1998) and semi-structured interview form developed by the researcher were used as data collection tools. In the analysis of the data, solutions of the problems applied were examined considering Polya's (1945) problem solving steps. The findings obtained via the solutions of applied problems and via the semi-structured interview form were established with the percentage and frequency values. As a result, it became evident that subject of problem solving has a positive effect on the development of mathematics teachers' problem solving skills.

Keywords: Mathematics Teaching, Problem Solving, Problem Solving Stages.

1. Introduction

Important mathematics concepts and procedures can be best taught through problem solving (Van De Walle, 2007; 37). Focusing on problem solving in lessons develops the students' high level thinking. For this reason, students perform self-learning in mathematics lessons with problem solving process. Problem solving plays an important role in mathematics education and most of learning is an occur as a result of problem solving process.

Problem solving is an integral part of all mathematics learning, and so it should not be isolated from mathematics program (NCTM, 2000). Schoenfeld (1992) declared that there were numerous unaddressed issues dealing with problem-solving instruction and assessment. The need for seek to answer questions concerns what actually takes place in problem-centered classrooms (Lester, 1994). Students are encouraged after problem solving process because problem solving contributes to the use of different solutions and development of strategies that students use.

Polya (1945) describes the process of problem solving at four stages, including understanding the problem, determining the strategy, implementing the selected strategy and assessment. At the stage of understanding the problem, the student is expected to state what he understood from the problem and to determine what are the given and unknown in the problem and also to suggest clearly the condition of the problem. At the stage of determining the strategy, the student is expected to determine which steps such as calculation, drawing, etc. to follow in order to reach the requested. The teacher, in this process, can promote the use of different problem solving strategies by writing the all strategies on the board and can enable the student to choose the suitable strategy (Miller, 2000). The following stage includes the application of selected strategy by the student. At the stage of application the selected strategy, the solution should be checked step by step. At the stage of assessment, on the other hand, the student should control whether the solution he made is right and meaningful. During the process of control, it must be fully put forth what has been done and where it has been done.

2. Methodology

Case study method was used in the research. A case study design is employed to gain an in-depth understanding of the situation and meaning for those involved (Merriam, 1998). A qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, or social unit (Merriam, 1988, p.21; Merriam, 1998, p.27).

The reason why case study method was preferred in this research is the investigation of problem solving skills and the views pertaining to problem solving process of 26 preservice teachers, studying in the 3rd year of elementary mathematics teaching.

Problem Status

1. Does the subject of problem solving have an effect on students' skills of understanding the problem, determining the strategy, applying and assessing?
2. How is the evaluation of problem solving subject according to students' opinions?

Study Group

The study group was formed of randomly selected 26 students who were taking the subject of "Problem Solving in Mathematics", which is a 3rd year subject of Elementary Mathematics Teaching in the Faculty of Education at Samsun Ondokuz Mayıs University. The selected 26 students solved the problems. Of these students, an interview was made with nine of the students who were randomly selected.

Data Collection Tools

In the study, two problems arranged by Posamentier and Krulik (1998) and translated into Turkish, and "Student Interview Form for Problem Solving", developed by the researcher were used. The data collection tools were explained below in detail.

The Problems

The problems asked to the students are included below.

Problem 1. Evelyn, Henry and Al play a certain game. The player who loses each round must give each of the other players as much money as the player has at that time. In Round 1, Evelyn loses and gives Henry and Al as much money as they each have. In Round 2, Henry loses, and gives Evelyn and Al as much money as they each then have. Al loses in Round 3 and gives Evelyn and Henry as much money as they each have. They decide to quite at this point and discover that they each have \$24. How much money did they each start with?

Problem 2. A jeweler makes silver earrings from silver blanks. Each blanks makes 1 earring. The shavings left over from 6 blanks are then melted down and recast to form another blank. The jeweler orders 36 blanks to fill an order. How many earrings can be made from the 36 blanks?

Student Interview Form for Teaching the Problem Solving Strategies

In the research, "Student Interview Form for the Problem Solving Strategies", developed by the researcher, was used as data collection tool. In the subject of problem solving, four main categories were formed while writing the interview items aiming at establishing the students' problem solving processes. The major categories arranged are as follows: (1) problem solving stage, (2) thinking skill, (3) practice and (4) assessment of the process. 11 questions were written on the interview form intended for problem solving strategies. The data obtained in the interview were recorded with a recorder. Permission was taken from those whom the interviews would be made with prior to the interviews. Having established the main categories, sub-categories were tried to be fixed. The sub-categories were determined by the two reseachers in terms of the reliability of the study. The inventory of interviews conducted was made to determine the sub-categories. The sub-categories were formed in accordance with the common results which both researchers obtained in terms of each question of item.

Another reliability step aimed at interview techniques, on the other hand, is the consistency in the process of writing out the talks recorded during the interview (Kvale, 1996: 236, quoted by Türnüklü, 2000). It is necessary to check the consistency of analysis in this process for the mistakes that may arise in the analysis of the tapes obtained after the interview to be reduced. Therefore, it is required that the consistency in the process of both analyses should be checked by analysing a part of the conversation, recorded to the tape, at two different times. To that end, agreement percentage formula can be used.

$$P = \frac{N_a \times 100}{N_a + N_d}$$

P: Agreement Percentage; N_a = Quantity of Agreement, N_d = Quantity of Disagreement

Data Collection

The data were collected in the subject of “Problem Solving at Mathematics” in the first term of 2013-2014 academic year. The period of practice of the subject was completed in 13 weeks. In the course of the lesson, Polya’s (1945) problem solving stages were told to the students. A number of problems were solved towards the end of the term and it was discussed what kind of strategies the problems could be solved. During the term, students formed groups in threes, and they solved some problems in the elementary mathematics program by considering the problem solving stages, and then they made presentation. The students’ presentations in the class were carried out according to Polya’s (1945) problem solving stages and in each question, they took care of employing different strategy. The presentations made cover the problems at different topics. At the end of each solution, it was discussed what kind of strategies the problems could be solved with and their ways of solutions. Each problem was evaluated considering the stages of understanding the problem, selecting the involved strategy, and applying and assessing the strategy. The specified problems and interview forms were applied to the students at the end of the term.

3. Results

The findings and comments as regards the problem condition of “Does the subject of problem solving have an effect on students’ understanding the problem, determining the strategy, applying and assessing the solution” are presented below.

First Problem

Understanding of the Problem

At the stage of understanding the problem, the evaluations regarding the given and the unknowns were presented in Table-1.

Table 1. The frequency and percent values at the stage of understanding in the problem

Understanding the Problem	Answers	Frequency	Percent
Givens	Right	23	%88
	Wrong	3	%12
Unknowns	Right	21	%81
	Wrong	5	%19

Table-1 reveals that students solved the problem by comprehending the understanding stage of the problem. At the stage of expressing the data correctly, 88 % of the students did it correct, while 81 % of the students express the unknown correct. This discovery revealed that students were able to identify the given easily than the unknown.

Selection of the Strategy

At the stage of selecting the strategy, the frequency and percentage values the students chose are presented in Table-2.

Table 2. The frequency and percent values at the selection strategies stage

Selection Strategies	Frequency	Percent
Working Backward	12	%46
Solving An Equation-Inequation	8	%31
Making A Table	5	%19
Making A Systematic List	1	%4

Table-2 suggests that the students selected the strategies of working backward (12 solutions), solving an equation-inequation (8 solutions), making a table (5 solutions) and making a systematic list (1 solution).

Application of the Strategy

At this stage, it was checked whether the selected strategy was applied correct or not. Whether the strategies the students selected were suitable or not for the solution of the problem was revealed at the stage of application. The assessment pertaining to application stage is provided in Table-3.

Table 3. The frequency and percent values at the stage of strategies implementation

Strategies Implementation	Frequency	Percent
Right Implementation	25	%96
Wrong Implementation	1	%4

The above table revealed that 96 % of the students applied the strategy they selected in a correct way. This findings demonstrates that the correct solution of the problem will be achieved via suitable strategy after understanding it.

Evaluation of the Solution

The data pertaining to the evaluation of the solution, which is the last of the stages of problem solving are given in Table-4.

Table 4. The frequency and percent values the stage of evaluation of the solution

Evaluation of the solution	Frequency	Percent
Right Evaluation	25	%96
Wrong Evaluation	1	%4

Table-4 revealed that rate of the students who reached a correct solution via the strategy he chose and who could evaluate the solution (f=25) was quite high (96%). As a result, it can be said from the correct evaluation (96%) that students are able to answer what we did and where?, what we obtained?. It was concluded that the students who reached the correct solution with the strategies they selected were successful at the stage of evaluation.

Second Problem

Understanding of the Problem

The data pertaining to the evaluation of the solution, which is the last of the stages of problem solving are given in Table-5.

Table 5. The frequency and percent values at the stage of understanding in the problem

Understanding the Problem	Answers	Frequency	Percent
Givens	Right	26	%100
	Wrong	0	%0
Unknowns	Right	25	%96
	Wrong	1	%4

The above table reveals that all of the students understood the problem. All of the students (100%) determined the given in a correct way, while 96% of them expressed the unknown correctly.

Selection of the Strategy

At the stage of selecting the strategy, the frequency and percentage values the students chose are presented in Table 6.

Table 6. The frequency and percent values at the selection strategies stage

Selection Strategies	Frequency	Percent
Making A Systematic List	8	%31
Drawing A Diagram	6	%23
Making A Table	6	%23
Finding A Pattern	3	%12
Guessing And Testing	2	%7
Logical Reasoning	1	%4

Table-6 suggests that the students chose many strategies in the selection of the strategy. It becomes evident that students selected the strategies of making a systematic list, drawing a diagram, making a table, finding a pattern, guessing and testing and logical reasoning. This finding revealed that students tendency to select different strategy increased.

Application of the Strategy

At this stage, it was checked whether the selected strategy was applied correct or not. The assessment pertaining to application stage is provided in Table 7.

Table 7. The frequency and percent values at the stage of strategies implementation

Strategies Implementation	Frequency	Percent
Right Implementation	24	%92
Wrong Implementation	2	%8

Table-7 reflects that the number of students who applied the selected strategy correct (f=24) was extremely high and then those who applied it (f=2). This finding reveals that thanks to the correct strategy selected in the process of solving the problem, correct applications were made.

Evaluation of the Solution

The data pertaining to the evaluation of the solution, which is the last of the stages of problem solving are given in Table 8.

Table 8. The frequency and percent values the stage of evaluation of the solution

Evaluation of the solution	Frequency	Percent
Right Evaluation	22	%85
Wrong Evaluation	4	%15

The above table indicates that 85% of the students made correct evaluations. This finding reflects that the selected strategy after understanding the problem produced correct results. It becomes evident that the students who reached a correct solution with the selected strategy and who were able to evaluate the solution (85%) completed the problem solving stages successfully.

“How is evaluation of the subject of problem solving according to the students’ opinions?” The Findings pertaining to Problem Status

Interviews were carried out to determine to what extent the students learned the problem solving stages taught in the subject of problem solving in mathematics. In the research, semi-structured interviews were conducted with 9 students at the end of the term. The entire interviews carried out with the students were recored to tape and all of the interviews were transformed into texts. In consequence of the interviews conducted with the students, the answers obtained aiming at major categories and sub-categories were encoded and their frequency and percentage values were calculated.

Prior to encoding the data to the previously-arranged categories, encoding reliabilities of the people to make the encoding procedure were calculated as 91%. The consistency of analysis was also checked in this process for the mistakes that might arise in the analysis of tapes obtained after the interview to be reduced. To that end, one part of the conversation was analyzed at two different times and the consistency in each of the analyses was

calculated. Agreement percentages according to the major categories formed in terms of reliability of the research was determined as 91% at the stage of problem solving stage, 96% at the category of thinking skill, 88% at the category of application and 89% at the category of evaluating the process. The findings pertaining to the interviews carried out in the subject of problem solving in mathematics are presented in Table 9.

Table 9. Findings Related to Problem Solving Course

Main Categories	Sub Categories	Codes	Frequency	Percent	
Problem Solving Stage	Understanding of the Problem	Givens	6	%67	
		Unknowns	5	%55	
		Text Problems	5	%55	
	Selection Strategies	Different selection strategies	Selection appropriate strategies	5	%100
			Ease of solution	3	%67
			Quick solution	6	%55
				9	%33
	Strategies Implementation	Relationships between concepts	Different solution way	4	%78
			Prior Knowledge	7	%78
			Modelling	7	%44
				3	%33
	Evaluation of the Solution	Permanent learning	What we learn	4	%78
			Come to fruition	4	%67
			Mental processes	6	%44
				7	%44
	Thinking Skill	Mathematical Thinking	Mathematics language	7	%100
Process skills			9	%89	
Reasoning			8	%78	
Application	Assessment	Reach a solution understanding	4	%55	
		Problem solving with stages	5	%55	
		Get rid of memorization	3	%44	
		Adaptation to daily life	4	%44	
		Point of view	5	%33	
Assessment of process	Solving Process	Creating Formulas	4	%100	
		Examine in detail a problem	9	%89	
		Mathematical inference	7	%78	
		Put away prejudice	6	%67	
		Decrease in calculation error	5	%67	
		Ease of learning	4	%55	
		Ease of learning	8	%44	
		Review textbooks	6	%44	
		Appropriate selection strategies			

The Findings and Commentaries Regarding the First Main Category

The sub-categories pertaining to the main category of “Problem Solving Stages” were analyzed in the sub-categories of “Understanding of the Problem”, “Selecting the Strategy”, “Strategies Implementation” and “Evaluation of the Solution”.

When students’ views regarding the sub-category of “Understanding of the Problem”, 67% of the students expressed their opinions as regards the fact that the given should clearly be specified at the stage of understanding of the problem. 55% of the students stated that they were easily able to move on to the selection of the involved strategy after understanding of the unknown. The students who remarked that problem text should be very clear (f=5) reported that they reached the solution by understanding the problems.

When students’ views regarding the sub-category of “Selecting the Strategy”, 100% of them express they move

on to the different strategies, 67% of them they can make analysis with the suitable strategy, 55% of the students states that they can reach the solution easily with the strategies they chose and 33% of them say they make rapid solutions.

When students' views regarding the sub-category of "Strategies Implementation", 78% of them states they can link up the inter-conceptual relationships, 78% of them says they can find different ways of solution, 44% of the students remarks that they use preliminary information and 33% of them indicates that they can make modelling while applying the strategy.

When students' views regarding the sub-category of "Evaluation of the Solution", 78% of them remarks they attained permanent learning, 67% of them says they analyze what they learned during the solution, 44% of the students reports that they can reach the solution easily while evaluation the solution and 44% of them states they can make mental processes.

When we look at the findings pertaining to the first main category, the students expressed their opinions that problem-solving stage can only be carried out with understanding of the problem, selection and application of the involved strategy and evaluation of the solution.

The Findings and Commentaries Belonging to the Second Main Category

The sub-category belonging to the main category of "Thinking Skill" was examined in the sub-category of "Mathematical Thinking". When students' views for the sub-category of "Mathematical Thinking" were considered, it was observed that 100% of them used mathematical language, 89% of them used process skill and 78% of the students employed skill of logical reasoning.

The Findings and Commentaries Belonging to the Third Main Category

The sub-category pertaining to the main category of "Application" was analyzed in the sub-category of "Evaluation".

55% of them expressed that they solved the problems by understanding, 55% of them said they found the solution thanks to the problem solving stages, 44% of the students reported that they were able to associate the evaluations with the daily life while making them, 44% of them said they got rid of memorizing and 33% of them stated that their perspectives to problems became more positive,

The Findings and Commentaries Belonging to the Fourth Main Category

The sub-category pertaining to the main category of "Evaluation of the Process" was analyzed in the sub-category of "Process of Solution". 100% of them to be able to create formula, 89% of them to evaluate the problems in a more detailed way, 78% of them to be able to make mathematical inferences, 67% of them to make less mistakes in the processes, 67% of them to get rid of bias at the stage of evaluation of the solution, 55% of them to pass the learning process easily while making evaluation, 44% of the students was reported to finish the process correctly if they select the suitable strategy and 44% of them not to examine their course books in detail this much.

4. Discussion

According to the results obtained, the students determined the given and unknown in the second problem in a correct way to a large extent, while they exhibited less success in writing the given in the first problem. It can be said that this result may change according to the degree of students' distinguishing the given and unknown depending on the difficulty of the problem. In addition, it was concluded that the students were able to detect the given more easily than the required in determining the given and unknown data in the problem. This situation may be due to students' being less in the habit of questioning what is exactly unknown in the problem.

Because students are prone to reaching the result immediately by employing the numbers in the problem and to moving on to the following problem while solving the problems (Erbaş and Okur, 2010), they start to make process without focusing on what is the unknown.

A number of research results carried out similarly also suggested that after the students had been taught various problem solving strategies, they learned and used these strategies, their success in mathematics increased and their skills of problem solving improved (Adibnia and Putt, 1998; Altun, 2005; Arslan, 2002; Artzt, and Armour-Thomas, 1998; DeBellis and Goldin, 2006; Faubion, 2001; Fan and Zhu, 2007; Ghunaym, 1985; Lee, 1982; Sulak, 2005; Wilson, Fernandez and Hadaway, 1993; Yaşar, 2010; Yazgan, 2002; Yazgan and Bintaş, 2005; Yıldızlar, 1999). In this sense, the studies carried out show parallelism with the research results.

5. Conclusions

It is observed that when looking to the strategies the students selected while solving the given problems, it is seen that the strategies show difference. The strategies of making a table and making a systematic list were used in both of the problems, while in the first problem they employed the strategies of studying retrospectively and writing equality. It is observed that the taught strategies enriched the ways of solutions. On the other hand, when considering the degrees of the preference of these strategies, in the first problem, the students at most applied the strategies of working backward study (12 solutions), solving an equation-inequation (8 solutions), making a table (5 solutions), respectively, whereas they employed the strategy of making a systematic list at the least (1 solution). In the second problem, the students at most selected the strategies of making a systematic list (8 solutions), drawing a diagram (6 solutions), making a table (6 solutions), finding a pattern (3 solutions), guessing and testing (2 solutions), respectively, whereas they applied logical reasoning at the least (1 solution). In this case, it can be said that the strategies the students selected change depending on the structure of the problem. In addition, the students' levels of adopting and apprehending the strategies may affect their the frequency of preferring the strategies. As a result, student is prone to select the strategies he understands best. Besides these, it was observed that some students tried to solve the problems without selecting the strategy. However, the number of solutions made applying strategy is more than that of the solutions made without applying any strategies in both problems. Students' trying to solve the problems without using any strategy is due to their encountering the indicated strategies for the first time and yet failing to internalize them.

When students' ways of applying the strategy they select are examined, it was concluded that in both problems, more than half of the solutions were derived through suitable strategies and each of the problems the selected strategies were applied correctly by 92% - 96%. This finding, on the other hand, reveals that problem solving skill is learnable (Larkin, 1980; Chi, Feltovich & Glaser, 1981; Azai & Yokoyama, 1984; Verschaffel, De Corte & Lasure, 1999; Altun & Sezgin Memnu, 2008) and if suitable learning environment is provided, that's to say, if students are continually and systematically subjected to problem solving process as in this research, this acquired skill brings success in the solution of another problems.

In literature, there are plenty of researches supporting that problem solving has significant contribution to person's cognitive development (Verschaffel et al., 1999; Dochy, Segers & Bossche, 2003; Gijbels, Dochy & Bossche, 2005; Özsoy, 2005; Akinsola & Awofala, 2008; Çalışkan, Sezgin Selçuk & Erol, 2010; Tüysüz, Tatar & Kuşdemir, 2010). In addition, there also some solutions made wrongly even though correct strategy was selected. This situation demonstrates that selecting correct strategy does not that it will lead to correct answer. Rudder (2006), Erbaş and Okur (2010), in the studies they carried out, obtained the results supporting our findings. The results derived for the two problems at the stage of evaluation of the problem indicate that the students are successful in evaluating the answers they provided.

Recommendations

According to the results of interviews, it was concluded that the subject of problem-solving affected students' skills of problem-solving stages, their thinking processes, and their applying and evaluating the problem in a positive way. The actively participation of the students, who received the education of problem-solving, in the lesson was determined with their positive views to the subject.

Presley (1995) set forth that the students receiving education for problem solving strategies are more successful as compared with those not being informed about these strategies and their problem solving skills are high.

The process of solving problems is now completely interwoven with the learning; children are learning mathematics by doing mathematics (Van De Walle, 2007; p.39). Problem solving stages contributes to the development of students. Students use various and different solution strategies. This situation encourages students.

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PUBLIC EXPENDITURE IN EDUCATION SECTOR OF NEPAL

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Abstract: Hence the education is a primary need of an individual; the government of Nepal has the role to provide it to the people cheaper and quality. Education is one of the primary and significant social factors which is closely linked with individuals and is the prime indicator of development as well. From a very beginning the government of Nepal is being spent public resources to enhance the situation of educational environment of country and to increase the literacy rate. In the recent years too, the government of Nepal has been spent about 16 percent of total budget expenditure in the educational sector in an average. But there is only 65.9 percent literacy rate, of those who are above 5 years, is achieved till the date. There are several countries in the world with hundred percent achievement of such the literacy.

General understanding about the issue is that there is a close relationship between the public expenditure and educational productivity. If the productivity of the education contrasts its expenditure, it is misuse of the scarce resources. It is because there are several social, infrastructural and economic needs and necessities of the people than the education in the country. It is obvious that the food, shelter and clothing are basic needs of the people rather than the education. To curb the situation there is need of rethink about the education policy, practices and procedures with respect to the utilization of its public expenditure. In one side, the huge resources from the public sector are spent in the education, unlikely the achievement is found no more satisfactory, comparatively. There is significant flow of foreign aid or assistance in this sector too, but there is strong debate and doubt of the quality of the education provided by the government. The paper tries to explore the issue of the rational utilization of the public expenditure in education in one side and the ways to make it more productive and result oriented in another. For it, some policies and literatures are reviewed and is compared it with some achievements.

Key Words: Financing, Buddhism, Investment

Background of Education Financing in Nepal

The educational background of Nepal is linked with some religious philosophies such as the Hinduism and Buddhism. Hence, the majority of the people, i.e. 81 % (Population Census, 2012) are the Hindu; previously it was Hindu country, whereas by 2006, Nepal is a secular country. In this connection Vedic education would be main educational base during that time. To educate and make the follower of the religion, the education was brought into light then. Later on, the Buddhism education also took place when the Lord Gautam Buddha was in lighted. Some social values, personal disciplines and code of conduct made by Lord Buddha later on became the Buddhism education. During that time, mainly the education was limited to the certain group of people and the place of teaching was Gurukul, Teacher's home/aashram, Gumba and alike. The state funding education was available only for the rulers, high class people and their kids to some extent. In these days education financing was made by personal efforts, mainly.

At that time, there was also the tradition of financing the education by the state itself. But most of the Buddhism educational system was financed by the Buddhism religious persons. In the modern history of Nepal, after the integration of the country by late Prithvi Narayan Shah in 17th century, the educational financing activities were around the palace or the state itself. After a long later, in 1910 BS, the Durbar High School was established to promote the English education financed by the state. It was the beginning and mile stone effort of educational institution in Nepal with state intervention. In that, late king Tribhuvan and then PM Chandra Shamsher Rana jointly established "Tri-Chandra College" to promote the higher education system with state initiation. The SLC examination system was began by 1990 BS, first from India and then from Nepal (Nepal, 2012).

The educational result in school level and situation was found very poor during 2007 BS (ibid.), not more than 2 percent people were primarily educated. 321 primary schools, 11 secondary level schools and one college were established. All these were financed, of course, by the government of Nepal, with the money of

public revenues. The first budget was announced by 2008 BS which tried to systematize the public expenditure, in the education as well.

From the beginning, the education was treated as the significant social need and foundation of the country, and likely the public expenditure was allocated. Recently also, even though, there are now different private investment systems in the educational sector in the primary, secondary, higher secondary and tertiary education, the government allocates a huge amount of its public revenue in the educational sector to achieve the higher educational productivity. In this connection, it is obvious that the education is funded, primarily, by the state. Milton Friedman (Friedman, 2002, p.87) says that the responsibility of providing the education is solely of the guardians, only a small part of the people who cannot afford at all only is to be subsidized by the government. He has also emphasized the government intervention in the education to some extent. Even though, Friedman is a strong proponent of liberalization principles, he advocated a limited government intervention in the educational financing by the state not directly, but by subsidizing.

The Trend of Public Financing in Education

The government has the social responsibility towards the people and society to spend the public resources rationally. It is more rational in the developing countries like Nepal due to paucity of the resources. The government collects the revenues from the business and people within the country and demands the foreign assistance (debt plus grants) to fulfill the development desire of the people. Such the resources are spent in social, development and usual sector with two motives; viz, to maintain the regular expenditure and to maintain the development motives, i.e. capital expenditure.

In the education sector also the government spends, basically with regular expenditures and capital expenditure. In regular expenditure, the salary, subsidy, stationary and curriculum printing cost are major. And in capital expenditure, the construction of the physical infra structure of the schools and colleges are the main. Likely, the part of the expenditure in the education sector is also covered by the foreign aid. It can be shown by the following table:

FY	NB (in Rs)	BE (in Rs.)	% of BE to NB	Foreign Aid (Rs.)	% of FA in BE
2056/57	77238226	10176074	13.17	2648268	26.02
2057/58	91621335	11749579	12.82	2586095	22.01
2058/59	99792219	14072847	14.10	2462706	17.50
2059/60	96124796	14402421	14.98	2894966	20.10
2060/61	102400000	15613274	15.25	3228318	20.68
2061/62	111689900	18059654	16.17	5438077	30.11
2062/63	126885100	21250447	16.75	5784145	27.22
2063/64	143912300	23005525	15.99	3586495	28.63
2064/65	168995600	28390000	16.80	7754090	27.31
2065/66	236015897	39086407	16.56	11010323	28.17
2066/67	285930000	46616672	16.30	14553823	31.22
2067/68	337900000	57827542	17.11	13006340	22.49
2068/69	384900000	63918839	16.60	15240061	23.80

Source: Shaikshik Suchana, Ministry of Education 2012. (Amount in '000 Rs.)

NB= total national Budget, BE= Budget in Education, FA=Foreign aid (grants plus loans), FY = fiscal year

In the table above, the allocation of the public expenditure in education and the foreign aid received in the sector are presented. The table carries the data schedule of the latest 13 independent fiscal years. According to the above table, the portion of the expenditure in education from the national budget is significant, i.e. average 15.75%. It was highest in FY 2067/68 and the lowest in FY 2057/58. As already said above, the expenditure in the education is not merely covered by the public resources but also from the foreign aid. Generally, the foreign aid is received from the bilateral and multilateral foreign sources, that comprises the donor countries, international institutions (such as UNESCO) etc. The foreign aid also comprises the foreign loans and grants, which is first received by the government and then is allocated by the government according to the agreements.

According to the above table, the part of foreign aid is also significant in the expenditure in education. The part of educational aid is found highest in FY 2066/67, i.e. 31.22%. It means that the remaining part, i.e. 70.78 percent part of educational expenditure of the year was born from the national budget. Likely among the thirteen years data the educational aid was lowest in FY 2058/59, i.e. 17.50%.

The public expenditure on education with comparing GDP of the country can explain the efficiency of budget allocation in the sector. Education by comparing the GDP The public expenditure in GDP is found 4.2 percent in 2011/12 that indicates the worth of the education with respect to the resource allocation. And from the total public expenditure, about 15 percent of resource allocation is a significant resource contribution by the

country. By the resource injection, there is no more questions that the country is able to improve and develop the education sector. But the reality, whatever found, is something questionable. The question is; is there positive relationship of resource mobilization with its achievements? Is the budget allocation sufficient condition to boost up the educational environment? What may the gaps between the resource injection and its achievements? What may be the ways forward to fulfill the gaps?

The Theory Regarding the Scarcity of Resources

Lionel Robbins, a great economist of twentieth century (as cited in Cowel & Witztum), propounded a theory of scarcity of the resources, i.e. mostly the financial resources are scarce and emphasized to use it in most prioritized sector for better utilization and productivity. He further elaborated his idea as "... when time and the means for achieving ends are limited and capable of alternative application, and the ends are distinguishable in order of importance, then behavior necessarily assumes the form of choice. Every act which involves time and scarce means for the achievement of one end involves the relinquishment of their use for the achievement of another. It has an economic aspect" (as cited in Cowel & Witztum). It shows the worth of public resources and the use of such the resources should be in more prioritized sector where more public benefit could be generated.

Robbins explained in his economics theory, the resources is always limited in the economy in one side and with individuals in another. The country always should try to utilize such the limited resources in optimum ways that the country can address the basic needs in the priority basis. He presented a philosophical base of human needs in an economy and not all the needs are equally significant. No matter, if there is resource abundant, all the needs could be fulfilled, but the realities are different. To curb such the contradictory situation, i.e. the resource limitation and unlimited needs; Robbins advised to make the list of the needs according to priority and their worthiness. Then try to manage the resources according to the priority of the list of needs. The wants, now, remain unfulfilled what are in the lower priority.

For a poor country like Nepal, has limited public resource that is collected as the tax revenue within the country. Additionally, the country collects the debt financing and grant financing from outside. But we have unlimited needs like health, foods, shelter, clothing etc as more urgent. Such the needs are more prior that to the education because all these needs are directly linked with one's survival. To maintain such the needs more amount of money is required for the government. She has to allocate more money to alleviate the poverty first. It means education is in lower priority rather than the survival of an individual. The worthiness of the resource should be used in more prior sector.

The Achievements in Education

The education is the fundamental social sector from where good and responsible citizens are produced. According to Friedman (2002, p.86), the education of one child contributes to his/her welfare by promoting one a stable and democratic society. It is not feasible to identify the particular individuals or families benefitted and so to charge for services rendered. There is, therefore, a significant 'neighborhood effect'. It means when a person becomes educated he/she becomes an asset of a society, not only belongs to a single person. Here, even though, it is difficult to measure and quantify one's social contribution.

The achievement of the education can be quantified to some extent too. The physical infra structures, number of teachers, number of students enrolled, percentage of the result from different educational grades, overall literacy rates of the country, segregation of the literacy rate in different grades etc can say the quantitative productivity of the educational sector. Out of them the most common measurement of education is found overall literacy rate that commonly indicates the educational achievement of a country. There are some countries, mainly in Europe, that have achieved cent percent literacy rate, and some countries are nearer of that achievement. In Nepal the literacy rate (above 6 years) is found 65.9 percent. The percentage is not assumed as more satisfactory with compare to the financial and non financial efforts towards it. Likely, the physical infrastructures may also be considered as the achievement in the education sector because it is also necessary to run the educational activities well. Basically, the infrastructures are spent from the capital expenditure by the government. Following are the number of schools established by the government expenditure.

S.N.	Institutions	Numbers	Enrollment of students	No. of teacher
1	Plus two	2,499	6,55,415	17,445
2	Schools (all levels)	29,063	74,44,134	2,58,237
	Total	31,562	80,99,549	2,75,682

Source: Nepal Education in figures 2012, Ministry of Education, GoN

Whole talking about the physical infrastructure in educational sector of Nepal, there are total of 31736 educational institutions from public sector. The government has injected billion of rupees to construct such the buildings, still there is found a scarcity of sufficient rooms, bench, desk, toilets, black boards and other structures. The average students in a class are found more than 40 in the government educational institutions.

From the above figure, the ratio of teacher to students in plus two is about 38, and in other schools it is about 29. Comparatively, the teachers are inadequate in plus two, still in schools and universities are also no more sufficient numbers of teachers available. It is insufficient from the side of the vacancy announcement from the Teachers' Service Commission that has announced hundreds of teachers for the recruitments. From the above presentation, it can be said that, however the amount the government has spent in the educational physically, it is insufficient.

The productivity, in another side, is also found no more satisfactory. We can present the pass percentage of the SLC result of some latest 10 years by the following schedule.

Year	2068	2067	2066	2065	2064	6063	2062	2061	2060	2059	Ave.
Pass %	47.16	55.50	64.31	67.47	63.73	58.64	46.51	38.72	46.18	32.05	52.02

Source: Shaikshik Suchana 2012, Ministry of Education

If we see and think the result of the SLC examination of the latest 10 years, we find it no more satisfactory. It is found only 52.02 percent in an average. When we add the pass percentage of SLC 2069, i.e. 41.72 percentages, the average will again be lesser. It simply means that the level of pass percentage of the SLC is only about half of the total appeared in the examination. A big question is raised why not rest of half? Likely, the examination result of grade 11 and 12 held by HSEB in 2068 is found about 38 percent and about 48 percent respectively. Competitively, the result of higher schools is found more dissatisfactory than SLC. Kantipur Daily (2013) reports the SLC examination 2013 far below than that of the previous years. It is found only 41.57 percent pass in the exam, i.e. majority pupils failed. The newspaper reports that the state spends about rupees one hundred thousand unto SLC exams for each student, in this sense from the result, about rupees 25 billion is seen misused. The report explains that the nation has spent about rupees four hundred billion in the education sector, but found weaker class environment and infrastructures, low motivated and devoted teachers to teach, and thereby poor result like the SLC.

The Gaps Causing the Inefficiencies of the Public Expenditure

From the above explanations some points are driven, first, the huge public resources are utilized in the education sector, which resource is scarce itself. Second, the infrastructures and number of teachers are still inadequate to well run the educational institutions. Third, the results of the educational institutions are found no more satisfactory.

The theory of scarcity and choice advocates about the limited financial resources within the country and the rational way of utilizing it is prioritizing the needs according to its worthwhile. It is obvious that in most of the developing countries like Nepal, the people are poor and cannot afford more. They are poor due to which they have limited sources of income. Whatever they earn is insufficient to maintain the survival cost, that's why the government of such the poor country cannot levy more tax to them. This is the reason to become the scarce resource to any developing country in one side. In another side, there are numerous survival needs like food, shelter and clothing. Development needs and requirement are also there. Without fulfilling such the core needs, one cannot think beyond. So, the scarce resource must be utilized in such a way that these needs be prioritized.

There is still more than one fourth of the population live under the absolute poverty line, without fulfilling the basic needs themselves in one side, and in another side, there is huge investment of about 16 percent of total public expenditure in the education. Still the result or productivity is still dissatisfactory. Why such gap is there? This is the matter of discourse to find the problem inside. What are the responsible factors for weak productivity of such the scarce public resource? May it be policy as such, or the implementing body i.e. the bureaucracy and the educational ministries and its wings, or others?

Rationale of the Discourse

No doubt, the education has multidimensional effect in the society and national development. No one can find the actual result from such the social investment haphazardly. The investment in such the core sector has a long gestation period to make returns. Of course, there is still demand of more investment that has the rationale too. The question is, should not we evaluate the cost and benefit of the public resources? Because a pie of such the resources is also from his labor and sweats. It must be utilized. There may be different ways and methodologies to judge and evaluate such rational of the return of the public resources.

The objective of the writer of this essay is quite not against the public investment in the education sector. And it does not try to prove that the public expenditure in education sector is unnecessary and to be curtailed. The resources are still inadequate to get hundred percent literacy rates to build the foundation of the development and prosperity of the country. But it should not be used without proper planning and its proper control. We may have a lot of paper planning but the utilization and control part of the public resources is still found lacking. Such the gap between need of additional resources and scarce public resources may be fulfilled by the alternative sources too. These may be the injection of more private investment in the education sector in one hand, and in other hand, we can invite the foreign investment in the education sector. Even though, these

alternatives are also not free from the demerits and limitations. It is now obvious that, still there is additional need of resources in the educational sector for better educational productivity, but the public resources must be properly utilized.

Concluding

We have a long history of the educational development in the country. It is the education that made the men/women from the animal. The education has the role not only of the development of the country but also to run the rules in the country. The education provided the guidelines of good rules towards the people. In sum total, the education is a base of change the world from the darkness to the brightness.

During the time being, the investment in the education became a crucial part and question of a society. How to run the schools and educational institutions became an important question. In the initial stage, there was no nay alternative way and sources to finance in the education, but during the time there are new sources found like community, private sector, foreign investment and donor agencies etc. still, the government or the public investment has significant role in financing the education in most of the developing countries like Nepal. A strong follower of the liberalism perspective Milton Friedman was also in favor of the subsidy by the government in the educational sector if there was needed. It was the usual way financing intervention in the education sector by the government. It also argues that there is need of public financing in the educational sector. Traditional economics is concerned primarily with the efficient, lest cost-allocation of scarce productive resources and with the optimal growth of these resources over time so as to produce an ever-expanding range of goods and services (Todaro & Smith, 2012). He also emphasized that in the most of the developing nations, there is resource abundant.

Recently, there are some emerging models of running the schools regarding the financial management. The models are used to collect the financial resources that are most needed to run the institutions, no doubt. Out of them, the government financing is most common and important, basically in developing countries, like Nepal. It is because; there is still dwell economy, i.e. the chronic poverty in one side where the people cannot afford the educational expenditure with their own income in one side, and in another there are some people who can easily afford the costly education system in the country and in the foreign too. Such the elite class is a few, on the basis of which the macroeconomic perspective is not to be determined. It means again, the government must run and invest in the education.

From the above analysis also there is still a situation of contradiction that there is strong need of, even, additional resources to be injected in the education to get the social objectives and channelize the development. As we know, the development of the country is merely the financial investment, making buildings, roads and big projects. If the level of people regarding the education and literacy is unable to absorb and utilize the physical facility, it again creates the gap between the people and development. On it, strong argument can be preceded that there is need of government financing in education. Another concern is also there that we must think what is our priority first, either poverty reduction or education. In it, my argument is still there that the education is way of decreasing the poverty indirectly. Directly, the too curb the poverty, employment and attainment of core basic requirements are most necessary. Education has the role to curb the poverty from the long path. So, here the limited resources must be thought to properly utilize.

Another part of the argument here is making the proper evaluation of utilization of the public resources in the education sector because there is general conception that the financing in education has no more successful result. It is now time to measure the effectiveness of the public financing in education both from qualitative and quantitative measurements. Such the research must prove the reasons and factors responsible for such the weaker result in the education sector and try to address the problem. It is also relevant with the point of view of social audit. It is obvious that a largest amount from the public resources out of social expenditure goes to the education sector, i.e. more than 15 percent of total public expenditure. The result also must suit to the expenditure. The mismatch of these two variables, the financing and the achievement raise the big question that must be addressed timely and properly. The usual question, here is, whether the supply of financing merely achieve the objectives or not.

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RELATIONSHIP BETWEEN TEACHER ASSISTANT SUPPORT AND ACADEMIC ACHIEVEMENTS OF EXCEPTIONAL STUDENTS IN INCLUSIVE EDUCATION

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Abstract: Through qualitative research this study investigated the relationship between teacher assistant support and academic achievements of exceptional students in Azerbaijan which also suggests universal implication. With semi-structured interview the researcher looked at the above-mentioned relationship through class teachers' eyes and with observation through his own eyes. The findings clearly imply that there is definitely a strong relationship between teacher assistant performance and academic development of students with special educational needs. However, involvement of assistant teachers into inclusion might lead to isolation within classes if they take superior position to class teachers. For the sake of effective start and progress of inclusive practice, education reforms should be implemented in order to increase class teachers' capacity in order to enable them to lead inclusive education.

INTRODUCTION

Depending on what country you live in, the personnel hired by schools to assist classroom teachers and special educators in their efforts to educate students with disabilities are known by a variety of names such as teaching assistant (TA), learning support assistant (LSA), teacher aide, paraprofessional, paraeducator, and special needs assistant (SNA) (Giangreco & Doyle, 2007). The utilization of teacher assistants to support the education of students with disabilities has increased in several throughout the world (Giangreco & Doyle, 2007, Logan, 2006). Teacher assistant's performance is considered a necessary mechanism to support inclusive education. Teacher assistants have become almost exclusively the way, rather than a way, to support students with disabilities in general education classrooms, especially those with severe or low-incidence disabilities (Giangreco, 2013). While teacher assistants engage in a wide variety of duties, their roles have become increasingly instructional over time (Carter, et al., 2009, Groom & Rose, 2005, Riggs & Mueller, 2001). Relevant literature suggests that when teacher assistants are utilized to support instruction a basic set of foundational practices should be in place. First of all, any potential instruction provided by teacher assistants should be supplemental, not primary or exclusive. Second, teacher assistants should be working from professionally prepared plans developed by teachers or special educators based on evidence-based approaches, thus not putting teacher assistants in the inappropriate role of making pedagogical decisions. Third, teacher assistants should be trained to implement these teacher-developed plans with procedural fidelity. Fourth, teacher assistants should be trained to constructively manage and respond to challenging student behaviors that might arise during instruction. Fifth, teacher assistants should receive ongoing monitoring and supervision from qualified professionals — not be left to fend for themselves. In addition to supplemental instructional roles, teacher assistants can undertake valuable noninstructional roles that allow teachers and special educators more time to work directly with students and collaborate with each other (Giangreco, 2013). These practices seem logical and desirable. However there is also the literature which suggests that they are the exception rather than the norm (Webster et al., 2010, Rutherford, 2011). Some recent research reports that teacher assistants can be effectively trained to undertake a variety of academic and social tasks that result in positive student outcomes (Malmgren, et al., 2005, McDonnell et al., 2002). But other observations of teacher assistants involved in instruction suggest that they may have difficulty implementing interventions with fidelity and are prone to engaging in instructionally unhelpful behaviors (Rubie-Davies et al., 2010). A key overall finding from a large-scale, longitudinal study in the UK reported consistently negative relationships between the amount of support from teacher assistants and pupils' academic progress (i.e., English, maths, science) that was not accounted for by pupil characteristics. As stated at the outset, this is not meant to blame teacher assistants; they are not trained teachers and should not be expected to function interchangeably as if they were teachers (Webster et al., 2010 as cited in Giangreco, 2013). One of those most fundamental conceptual and practical problems associated with the heavy reliance on teacher assistants to support the academic and social needs of students with disabilities is the simple truth that we are assigning the least qualified personnel to students who present the most complex learning challenges (Brown et al., 1999; Rutherford, 2011). Descriptive research has documented that the seemingly well-intended assignment and excessive proximity of a teacher assistant to a student with a disability

can lead to a wide range of inadvertent detrimental effects such as (a) separation from classmates, (b) unnecessary dependencies, (c) interference with teacher engagement, (d) interference with peer interactions, (e) insular relationships between students and teacher assistants, (f) stigmatization, (g) limited access to competent instruction, (h) loss of personal control by students with disabilities, (i) loss of gender identity, and (j) risk of being bullied (Giangreco, 2013).

Research suggests that the training, deployment and teacher relationships of TAs can determine the impact they have. There are calls for more focused training for TAs entering the profession, particularly as there may be a mismatch between the training they receive and the demands of their role (Groom and Rose 2005, Blatchford et al., 2011). The impact of TAs can vary depending on how they are deployed. For example, TAs who are used to deliver specific interventions have a more positive impact on pupil performance than those who are not (Farrell et al. 2010). Similarly, TAs who work with small groups may be more effective than those working with individual pupils (Howes 2003). With regard to teacher relationships, TAs would appreciate, amongst other things, more joint planning time with the teachers they support, as they often arrive at lessons without knowing what they will be doing. Clearly, the use of TAs is a complex issue that needs to be better understood if they are to facilitate the inclusion of pupils with special needs (Symes and Humphrey 2011, Farrell et al., 1999; as cited in Symes & Humphrey, 2012).

THE ROLE OF A CLASS TEACHER (CT)

As a result of the inclusive education movement, classroom teachers have become significantly more involved in the education CSN. The attitude of the class teacher (CT) towards students has a major impact on the success of all students, particularly those with special needs. Classroom teachers must be able to perform different skills, such as the following: acting as a team member on assessment and “individual education plan” committees; being innovative in providing equal education opportunities for all students, including CSN; and individualizing instruction for CSN; advocating for CSN. To sum up, classroom teachers control educational programs for all students (Smith et al., 1998).

Studies suggest (Sanders and Horn, 1998; Bailleul et al., 2008, as cited in European Agency for Development in Special Needs Education, 2010) that the quality of the teacher contributes more to learner achievement than any other factor such as class size, class composition, or background. Reynolds (2009, as cited in European Agency for Development in Special Needs Education, 2010, p. 7) says that it is the knowledge, beliefs and values of the teacher that create an effective learning environment for all students, making the teacher a critical influence in education for inclusion and the development of the inclusive school. European Commission Communication Improving the Quality of Teacher Education (2007) states that teachers need to have the full range of subject knowledge, attitudes and pedagogic skills to be able to help young people to reach their full potential by responding to specific needs of each student applying a wide range of teaching strategies. Moreover, in the same document it is highlighted that Higher Education institutions have an important role to ensure that their teacher education courses are based upon solid evidence and good classroom practice (European Commission Communication Improving the Quality of Teacher Education, 2007, p. 15). Following a survey of primary school teacher training Franzkowiak (2009, as cited in European Agency for Development in Special Needs Education, 2010, p.27) recommended that introductory courses on inclusive education should be mandatory for all teacher education students, and bachelor and masters courses should include inclusive education and combined degree programs. Moreover, regular trainings are very important for teachers. Studies conducted by Avramidis et al. (2000) indicate that teachers who participated in trainings of high quality feel to be more competent in teaching inclusive classes. With professional trainings teachers get detailed information and necessary skills in inclusive education, and consequently get self-confidence in teaching profession which increases their eagerness to take responsibilities of a classroom with diverse needs (Opdal et al., 2000).

THE ROLE OF A TEACHER ASSISTANT (TA)

Students with disabilities who attend in inclusive schools are now likely to be allocated a TA for further support to benefit from education with their peers. So the relevant response to inclusive education is to make sure that there is an extra teacher available in the classroom whose role is important for success of inclusive practice (Lacey, 1999). Farrell et al. (1999, as cited in Vincett et al., 2005) clearly present the distinction between the role of TAs and teachers. Teachers plan the programs, monitor their success, hold review meetings, and liaise with parents. And the responsibility of a TA simply is to implement the programs under teachers’ guidance. And TAs support students in mainstream classes by keeping in contact with those who need help, but not sitting with a student. Support cannot be only in favor of students with special needs. Rather, it must support class teachers (Hrekow and Barrow, 1993). For Kennedy et al., (1975) it is not the responsibility of a TA to plan activities, organize or manage classroom. Their performance is restricted to only encouraging and helping student when they need support. Since TAs are mainly allocated to work specially with children with special needs (CSN), some problems emerge from this practice. First, students become dependent on TAs both socially and academically. Moreover, this practice causes identification of such students as different, and consequently can

make a barrier for a CT to know students with special needs better in order to plan and prepare curriculum activities for their inclusion. And lastly, this practice prevents the whole class students from benefiting support of TAs (Jones, 1987). To avoid these negative effects of classroom support by TAs a number of principles should be followed. First of all, the instruction provided by TAs should be supplemental, but not primary. Second, TAs should work on professional plans prepared by a CT or a special educator. Third, teacher assistants should get professional trainings. Finally, TAs should be under regular monitoring and supervision of qualified experts (Causton-Theoharis et al., 2007). The fact is that the successful inclusion of CSN does not normally happen without assistance, and to create effective assistance school personnel have to work in cooperative methods to provide appropriate programs to all students (Smith, 1998).

KEY PRINCIPLES OF CT – TA COLLABORATION

To attain a better inclusive classroom Vincett et al. (2005) suggest key principles for effective teacher-TA teamwork. The main principles are as follows: senior manager demonstrates commitment to teamwork; classroom teams are clear that they are a team and values positive interdependence; team members have a strong role in defining effective practice for their classroom teams; teachers and TAs have opportunities to reflect on, share and agree their common aims, goals and roles within the team; TAs are allocated to work with a limited number of teachers so that they can spend time getting to know them; classroom team have good communication system; TAs and teachers have time to plan and evaluate together; meetings are carefully structured, with clear roles and opportunities for all to give views, regardless of status; time for teachers and TAs to meet outside of teaching time is accounted for in pay structure and cover costs; teacher and TAs participate in at least some joint trainings.

CO-TEACHING IN IE

Recent trends in inclusive education and legislations promoting access of children with exceptionalities to public school have brought “co-teaching” to the focus of attention which is introduced as a means for improving effective instructions in IE (Cook and Friend, 1995). Co-teaching is implemented to increase and support the inclusion of children with disabilities, and usually includes one general education teacher and one special needs education teacher (Mastropieri and Scruggs, 2006). One of the advantages of co-teaching is that specific viewpoints and approaches of general and special educators are merged to reproduce unique teaching strategies that would not occur if one of them were absent (Friend et al., 1993).

Cook and Friend (1995) give the following definition for co-teaching: two or more professionals delivering substantive instruction to a diverse, or blended, group of students in a single physical space. Moreover, Cook and Friend (1995) elaborate on four key components of this definition. First one is that co-teaching involves two or occasionally more educators, one of which is a general education teacher and the other is a special educator. The second part of our co-teaching definition specifies that the educators deliver substantive instruction which means that that both professionals are involved actively in the instruction of students. Third, the educators teach a diverse group of students, including students with disabilities. The last component clearly indicates that in co-teaching the instruction is delivered primarily in a single classroom or physical space. Still it does not preclude the possibility of occasionally separating groups of students for instruction that involves considerable activity with possible high levels of noise and distraction.

CO-TEACHING APPROACHES

Cook and Friend (1995) also outlined five co-teaching approaches: One Teaching One Assisting where one teacher takes a clear lead in the classroom while the other observes students assisting them as needed; Station Teaching where teachers divide instructional content into two or more segments and present the content at separate locations within the classroom; Parallel Teaching where the teachers plan the instruction jointly, but each delivers it to a heterogeneous group consisting of half the class; Alternative Teaching where one teacher works with the small group while the other instructs the large group; Team Teaching where both teachers share the instruction of students. Cook and Friend (1995) argues that all these approaches have variations depending on the subject, age of the students, and none of the approaches is best or worst which can be used alone or with another. The particular model should be based on the needs of students, curriculum knowledge of teachers, and if necessary, grouping decision (Anderson et al., 2013).

THE CONCEPT OF ACADEMIC ACHIEVEMENT

For Fisher et al. (1995) academic achievement refers to successful performance in schooling. Schooling, in its term, includes academic skills such as writing, reading, problem solving etc. which are integral parts of academic content. School environment is critically important for advanced educational performance. The level of achievements of CSN in IE depends on several factors one of which is teaching approach of an educator. Teaching strategy has appeared to improve academic success throughout all grade levels for both with and without special needs (Fisher et al., 1995). Other techniques which has boosted educational attainments of CSN

are the usage of didactic materials in addition to textbooks in the sphere of social studies (Gersten et al., 2006), and using an inquiry-based approach to science with a focus on varied ways of communicating learning (Pulincsar et al., 2001).

Armstrong (2006) proposes more detailed definition of academic achievement: academic achievement is the totality of speech acts and written communications that view the purpose of education primarily as supporting, encouraging, and facilitating a student's ability to obtain high grades and standardized test scores in school courses, especially in courses that are part of the core academic curriculum. For Armstrong (2006), first and foremost in academic achievement is an emphasis on academic content such as literature, science, and math, and academic skills such as reading, writing, problem solving, and critical thinking.

Some studies show that (Sanders and Horn, 1998; Bailleul et al., 2008, as cited in European Agency for Development in Special Needs Education, 2010) that a competent teacher can support and boost academic achievements of children more than other factors. A teacher who is equipped with necessary knowledge and experience is apparently a leading factor to provide equal opportunities and education for all within inclusive setting. Reynolds (2009, as cited in European Agency for Development in Special Needs Education, 2010, p. 7) suggests that a teacher's joint features such as theoretical and empirical knowledge, teaching approach, and values can create a suitable learning environment for all.

INNOVATIONS IN EDUCATION

"An innovation is a planned change, which aims to improve practices." (Skogen, 2001, p. 326) Dalin (1978) suggests that innovation means a deliberate attempt to improve practice in relation to certain desired objectives. For Dalin (1978) most studies of educational innovations are concerned with relatively small adjustments of old practices, replacing them by new methods, organizational arrangements or personal policies, and the innovations are not concerned with a redefinition of objectives but rather with a redefinition of the operations of old objectives. Dalin also suggests (1978) a "typology of innovations" with the following dimensions: Objectives and Functions. Innovations are mainly concerned with the objectives and functions of the school in the broader social and economic context; Organization and Administration. Innovations mainly concerned with the organization and administration of the educational system; Roles and Role Relations. Innovations mainly concerned with role definition and role relationships which aim to improve relations between individuals and among groups; Curriculum. Innovations mainly concerned with the curriculum, its aim, content, methods, evaluations, material and internal organizations of instructions.

METHOD

In this research a qualitative research was used to investigate class teachers' view of the performance of teacher assistants in Azerbaijan. Secondary purpose of the research is to find out whether there is a relationship between academic achievements of CSN and work of a TA in the inclusive education context in Azerbaijan. Qualitative research is used to get an explicit understanding of the research questions which involves the perspectives of study participants and the context which they are in (Hennink et al., 2011). Referring to the viewpoints of the research participants to understand the nature of educational process qualitative approach in educational researches tries to explain what happens in educational settings (Burton and Barlet, 2009). Qualitative research also seeks to understand participants' lived experiences from their own point of view (emic), and recognize the subjectivity of participants and researcher (Rubin et al., 2005).

DATA COLLECTION

As for the research method, qualitative study this will adopt triangulation, a multiple methods of data collection which will include a semi-structured interview and observation to extend confidence in its validity and improve the quality of the data and accuracy of the findings. "Use of multiple methods to collect data about a phenomenon can enhance the validity of case study findings through a process called triangulation." (Gall et. al., 2007, p.460). The interview was conducted with the following semi-structured questions:

1. How do you understand the role of a CT in inclusive education?
2. How do you understand the role of a TA in inclusive education?
3. How do you collaborate with a TA?
4. Is there relationship between a TA performance and academic achievements of CSN?

An ideal complementary data collection technique to interview is observation which is conducted in natural contexts helps fill gaps in data collection which may occur in interview. In contrast to interview observation allows a researcher to formulate their own version of what is occurring and then check it with the participants. Observation provides a more detailed description of the phenomenon than would be possible by just referring to interview. Observation provides an additional source of data for verifying the information gained by other methods (Lodico, et al., 2010). In this study also, the researcher, through observation, tried to concentrate on similar aspects of the interview and collect relevant data in order to test validity of it. Observations were hold in two lessons of each participant. Observation focus is as following:

1. Performance of a CT
2. Performance of a TA
3. Collaboration between a CT and a TA
4. Relationship between a TA support and academic achievements of CSN

SAMPLING PROCEDURE

This study deployed purposeful sampling which assumes selecting cases such as events, groups, individuals that are likely to be “information-rich” with respect to the purpose of the study (Gall et al., 2007; Cohen et al., 2007). The main reason why purposeful sampling was employed in this research is that there are few schools offering inclusive education in Azerbaijan. One out of these schools, which has been educating CSN continuously, was selected on the assumption that this school would most likely provide rich data for analysis. Purposeful sampling was also employed when selecting participants because the more experienced the participant is the more information he/she can give. To find a suitable sample the researcher referred to the website of the Ministry of Education for the list of inclusive schools. Later, to select most relevant school the researcher contacted an officer in the ministry who is in charge of inclusive schools, and asked for recommendation.

Based on recommendation, the researcher selected four well-performing inclusive schools which have constantly accommodated CSN for about ten years. As for the well suited participants, the researcher consulted the principal of the school and came to a mutual agreement on the participants based on the criteria of the researcher. Two participants from each school were chosen and at least two interview meetings with each participant were scheduled in order to reach the point of “saturation”, the concept which is explained in terms of “when no new data are emerging” (Corbin and Strauss, 2008). The participants were provided with interview guide so that they could get familiar with the content of the interview, as well as with an informed consent which explained procedures, topics, possible future perspectives of the research.

FINDINGS

PRESENTATION OF THE INTERVIEW DATA

How do you understand the role of a CT in inclusive education?

Classroom teachers must be able to perform different skills such as acting as a team member on assessment and “individual education plan” committees; being innovative in providing equal education opportunities for all students, including CSN; and individualizing instruction for CSN; advocating for CSN. To sum up, classroom teachers control educational programs for all students (Smith et al., 1998).

Common implication of what class teachers said suggests that teachers are quite aware of their responsibilities and commitments. Almost all of them mentioned the necessity of individual approach to CSN and provision of equal opportunities for them. However, all the participants, directly or indirectly, indicated that they don't have crucial role in inclusive education process. A teacher remarked:

“...To be honest, it is impossible because there are more than twenty-five students in the class so it is nearly impractical to think a class teacher can realize individual approach for each student, including CSN. So it is a grace to have a teacher assistant nearby. I cannot imagine what I would do without my assistant.”

Another teacher also mentioned: *“I do my best to deal with learning of exceptional students in my class but I believe this is assistants' responsibility to take special care of them. What is an assistant for?”*

One of the teachers also underlined the same point: *“Well, I understand that my role should be leading in inclusive education and this is exactly what I am trying. This is what we were taught in in-service trainings. But I think this is a conflicting point of theory and practice. I say it out of my experience because I fail to be a leader.”*

How do you understand the role of a TA in inclusive education?

The responsibility of a TA simply is to implement the programs under teachers' guidance. And TAs support students in mainstream classes by keeping in contact with those who need help, but not sitting with a student. Support cannot be only in favor of students with special needs. Rather, it must support class teachers. It is not the responsibility of a TA to plan activities, organize or manage classroom. Their performance is restricted to only encouraging and helping student when they need support.

Interview data obviously indicate that all the participants regard a TA as a key figure in inclusion. A teacher said: *“As you know there could be a student with any kind and degree of mental disability. Probably none of them will improve academically with the aid of common teaching methods because they require special and private attention and care. Here a TA is my savior.”*

One sentence of one of the teachers includes what the others also mentioned as a reply to the question: *“Before starting inclusive education project we had training. Theoretical knowledge of the trainings suggests that the participation of a TA should be of secondary importance in inclusion. But the reality proves that the role of a TA is central and a CT has supporting role. I am not disappointed because I acutely conscious of the fact that with more than twenty students, hard curriculum requirements, and poor teaching aids it is impossible to lead inclusive education as a CT.”*

How do you collaborate with a TA?

Cook and Friend (1995) outlined five co-teaching approaches: One Teaching One Assisting; Station Teaching; Parallel Teaching; Alternative Teaching; and Team Teaching. These approaches also have variations depending on the subject, age of the students, and none of the approaches is best or worst which can be used alone or with another.

The interview data clearly show that there is very weak collaboration between CTs and TAs. Three teachers noted that they had learned a couple of strategies for effective cooperation which were nearly similar to Parallel Teaching and Team Teaching. But as for practical collaboration, almost all the interviewees stressed “providing some instructions”, “showing general direction”, “handy tips for teaching methods”. One teacher highlighted: *“Before explaining new lesson I give certain instructions to my assistant regarding how to deliver new knowledge and which methods to use. My instruction is a kind of recommendation because my assistant knows the exceptional students in the better than me and she knows how to arrange teaching and learning.”*

Is there relationship between a TA performance and academic achievements of CSN?

Academic achievement refers to successful performance in schooling. In other words, academic achievement is the totality of speech acts and written communications that view the purpose of education primarily as supporting, encouraging, and facilitating a student's ability to obtain high grades and standardized test scores in school courses, especially in courses that are part of the core academic curriculum.

Interview data indicates direct and strong relationship between a TA support and achievements of CSN. According to the view of all participants, achievement level of exceptional students in the current context of inclusive education would definitely be near zero.

One participant underlined: *“Without an assistant the rest of the student would also experience harm of inclusive education because a CT would be totally confused in between exceptional and typical students. Maybe, it is possible to handle the situation without a TA but at the moment in the reality of our education system and education paradigms this probability is very low.”*

Another participant declared: *“Well, in the absence of a support by assistant, I think I would be able to promote social interaction of CSN but definitely not learning. Inclusion is not only about socialization, it is also about quality education of all students. So no TA, no achievements, I believe.”*

PRESENTATION OF THE OBSERVATION DATA

Performance of a CT

Observation data seemingly confirms interview data in terms of too passive participation in inclusive education. In all cases a TA and the CSN allocated to them sat in the far back of the classroom with zero participation in class process. Regularly, TAs held teaching in a separate classroom. All the class teachers were completely engaged in the class process paying too little attention to the teacher assistant–exceptional child dyad. Only in one case, when a student with autism felt some minor discomfort and tried to escape the classroom, a class teacher interfered in the process and helped the assistant calm the student and sit down in his place.

In all observed classes, there were more than twenty students. CTs experienced an obvious difficulty to attend each student privately. In such a case, serving a student with special educational needs demands double the energy and time that CTs spend with students without special needs. Moreover, the lack of necessary teaching aids was quite apparent.

Performance of a TA

Interview data in this point were also confirmed by observation data. TAs' role and contribution were quite prominent. Each teacher assistant was allocated one exceptional student at a time. Obviously, a teacher assistant–an exceptional student dyad is quite usual phenomenon in inclusive education in Azerbaijan. TAs' did exert themselves in order to teach exceptional children sitting at the back of a classroom. Sometimes, when a student had a sense of unease or when it is needed to talk loudly, the dyad went to special classroom assigned to them. Current situation strongly suggest that assistants are not teacher assistants but rather student assistants.

Collaboration between a CT and a TA

Observation revealed no data regarding professional and constant collaboration between CTs and TAs. As mentioned above, the only contribution of a CT was in a case of a student with autism whose discomfort caused a small chaos in a classroom process.

Relationship between a TA support and academic achievements of CSN

With this study the researcher did not intend to assess exceptional students' achievements but rather to find out possible correlation between a TA support and learning accomplishment of student with special educational needs. Based on active and decisive performance of all observed TAs, the observation findings lead to the

conclusion that even the least academic development appears as a result of hard work of industrious TAs.

DISCUSSIONS

In terms of inclusive pedagogy and education policy of the most countries, a TA is not meant to be central character. Instead, a TA is, and should be, in inferior position following the guidance of a CT who is in full charge of all students functioning as a team. Inclusive practice in the countries with better inclusive education keeps a CT's superior status even though a TA has an educational and professional background in teaching. A dominant position of a CT is important because otherwise exceptional students are excluded from mainstreaming even if they are physically present in a classroom. The findings confirmed once more that an inner school marginalization of CSN emerges when a CT and a TA perform on their own ignoring each other. In order to shift centre of gravity from a TA to a CT, the decision-maker in education should address themselves to some crucial issues.

First and foremost they should dare to initiate innovations in education on four main levels: Objectives and Functions; Organization and Administration; Roles and Role Relations; and Curriculum. Moreover, improving CTs' capacity with assistive technology, differentiated instruction, universal design, individual education plan, and individually adapted curriculum can increase CTs' leadership skills in inclusion. Also, reducing class size, access to adapted materials, availability of special educator support, promoting collaboration between a CT and TA through co-teaching approaches such as "Alternative Teaching", "Team Teaching", "One Teaching One Assisting", "Station Teaching" and "Parallel Teaching". The study results clearly imply that letting TAs too close to exceptional students will definitely lead us to exclusion within inclusion. For effective inclusive praxis class teachers should be high up in the school teaching hierarchy.

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TEACHERS' ACCEPTANCE ON USING INFORMATION COMMUNICATION AND TECHNOLOGY (ICT) IN TEACHING TAMIL LANGUAGE

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Abstract: This study was conducted to identify the teachers' perception of using information communication and technology (ICT) in teaching Tamil Language at Tier 1. Theory of acceptance model (TAM) was used to identify the teachers' perception on their acceptance of using ICT in teaching Tamil language at Tier 1 KSSR. The study was conducted using a qualitative approach. Observations and interviews were used to collect data. Six respondents among teachers were interviewed. The results showed that teachers' acceptance on using ICT is positive in terms of significancy, facility and teachers' readiness in teaching Tamil at Tier 1 KSSR. Based on the research findings, suggestions have been proposed to increase the effective use of ICT in teaching Tamil language at Tier 1 KSSR among teachers.

Keywords: Teachers' perception, information communication and technology (ICT), Tamil language, theory acceptance model (TAM).

1. Introduction

In the 21st century, Malaysia country faces the challenges of globalization, liberalization, internationalization and development of Information and Communication Technology (ICT). Thus the Ministry of Education (MOE) provides an educational development program that can produce citizens who are knowledgeable and ICT literacy, skills and noble, (PIPP) 2006-2010. Ministry of Education (MOE) has introduced a range of policies and measures to promote education, including launching the National Education Blueprint (PIPP) 2006-2010. One of the core roles of PIPP is to modulate up and promotes the smart school program and the use of ICT in teaching and learning has been established, PIPP (2006). To expand the use of ICT in schools, the MOE targeting all Primary Schools and secondary schools completed infrastructure, equipment and software is complete and sufficient, the instructors and staff receive adequate training to ensure that the use of ICT in force in R & D. (PIPP, 2007).

According Volman and Eck (2001), cited from a subject, Singh and Chan (2014), The use of ICT brings a creative and supportive learning environment that is able to transform pedagogy and learning in any event it still gives knowledge. ICT is not just regarded as a creature, but also as a way to hold up new ways of instruction and scholarship. The use of multimedia in education many students interested in learning because it is attractive, easy to use, there is increasing diversity such as music, videos, demonstrations, and even understanding them become more efficient through lighting through images and impressions directly (Plamen & Rodgers, 2003). The information revolution is happening due to the advancement of ICT posed new challenges to the teaching profession, as well as the progress that has occurred needs to be exploited to enhance the prestige of the teaching profession who are facing changes in the 21 century (Ward & Peppard, 2003).

The government of Malaysia has introduced the computer hardware in schools across the nation. Expected in 2015, all schools across the country will enforce the learning concept of "Smart School" of the teaching and learning based ICT (Ministry of Education, 2012). The challenges of education, requires the active participation of the ICT among teachers to apply technology in teaching and scholarship process. This is confirmed by research led by Isaiah (2003), the teachers are asked to master ICT skills in the instruction process. Therefore, the development of ICT has changed the development process of reading from traditional methods to more advanced methods. According Melvina and Jamaludin (2010), developing countries require more teachers who have specialised in the field of information and communication technology (ICT). Teacher education, grooming also implies a paradigm shift in society to produce qualified teachers in their ability to develop and evolve the society and the state.

2. Teachers' Acceptance On Using ICT in Teaching Tamil Language

Teacher means one who teaches, teacher, educator or caregiver (Kamus Dewan, Fourth Edition, 2013). A teacher is a pleader in the scholarship process. Teachers are educators who instruct the pupils in the school syllabus set by the CDC (Curriculum Development Centre). They must be skilled in performing the duties of teaching and reading along. The job of a teacher is to instruct and prepare people so that scholars can achieve the objectives of the planned teaching and learning based on the syllabus that has been typeset. In the 21st century, the workload of teachers is more challenging. In rundown to his teaching duties, teachers are also burdened with clerical duties, facilitator, motivator, planners, curriculum advisors, leaders of clubs or associations, uniformed units, sports instructors and more.

According to Che Jacob (1991), instructors are burdened with tasks which many sides may reduce their focus to the primary task of instruction. Che Jacob statement is backed up by studies that accept been led by Abdul Shukor Shari, Abd.Rahim Mohamad Rome and Yazid Kerya (2006) which puts forward other than academic subject area, teachers also have to submit a band of other duties either in non-academic domains such as the chairman of the committee and the committee of the committee in varying task in school. And then the teachers are forced not get to spend a good heap of time to stimulate the economic consumption of ICT in the teaching process.

Teaching & learning methods in Tamil language and application of ICT is one of the latest to be practiced by educators. Instructors are encouraged to employ teaching methods and computer-aided learning (CAL) in language teaching assignments. Based on the matters contained in the use of this courseware, planning and implementation of computer-oriented teaching students practicable. The teachers also receive the opportunity to diversify teaching strategies in the classroom and be capable to optimize the effectiveness of pupil-centred instruction.

Acceptance means the description or individual receiving or accepting a tool (Kamus Dewan, Fourth Edition, 2013). Acceptance teacher means a teacher or instructor receives a device or person for the purpose of improving the instruction procedure. In the context of the teacher, they need to think either positively or negatively the acceptance of changes in teaching and learning in the development of ICT. In this study, teacher recruitment refers to the ability level of use of ICT by the ICT skills mastered by teachers in teaching and learning Tamil. Maznah Zulkifli and the King (1994) in his study found that a positive attitude is important to encourage a student to read a subject. Therefore, attitudes and awareness are the best means to foresee and predict its commitment to the utilisation of information processing systems. Attitude and confidence and high efficacy of teachers can help simplify the process of increasing acceptance for use in the implementation of ICT as teaching and learning in the classroom

Teachers as well play a role in determining a positive attitude towards the adoption and use of ICT in teaching and scholarship. The findings establish the perceptions and attitudes could change if teachers have training or ICT courses. This is observable in the study Jimoyiannis and Komis (2006) studying the effects of ICT courses for teachers' perceptions and attitudes towards ICT in educational activity. Results showed that the legal age of teachers holds a positive attitude towards the importance of using ICT as a tool for teaching & learning. They also felt ICT very important in today's education system. While Levin and Wadmany (2006) examined the perceptual experience and practice of teachers in the use of ICT in the classroom. Their findings showed that teachers' perception began to qualify when they are using ICT in the classroom. Teachers' perceptions changed from negative to positive, and they in turn feel more confident in using ICT in the classroom.

Still, usage of ICT in the process of learning is still not widely used by teachers, especially teachers who teach Tamil language in primary Tamil schools. The question of to what extent ICT has been acknowledged and practiced by primary school teachers in Tamil schools remains questionable. According to the study, Norsidah T, Mohamed, Mahmud Rosnaini Dato Hj Nawawi & Mokhtar (2012) also explain that the level of ICT usage among elementary school teachers is still poorly implemented. Thus the primary aims of this survey are to identify the perception of acceptance the use of ICT in teaching Tamil language among teachers in primary Tamil school.

3. Methodology

In this research, the researcher opted to adopt qualitative of observation and interviews. According Marriam (1998), is a form of qualitative research methods often used by researchers to obtain and understand a phenomenon of perspective and a holistic view of the masses involved. Observations with the interview method

used to produce evidence on the use of ICT in teaching and learning among instructors. Researchers have conducted laboratory observations of the computers available at the school and observe the respondents teach in teaching and learning to ensure that stated by respondents about ICT in teaching is true as required by the Ministry of Education (No.6 / 2003). Researchers collect samples during the interviews and observations taken for a period of 2 weeks for 60 minutes over 6 teachers (the respondents) who taught Tamil language in one of the primary Tamil schools.

The respondents consisted of 6 teachers teaching subjects in Tamil under the oversight of a committee of teachers whom teaches Tamil language in primary Tamil schools in Mentakab Town, Pahang. The respondents were selected using purposive sampling (purposeful sampling). Purposive sampling means that researchers take the theme and location of features and specific functions. (Caresswell, 2005). Respondents were selected for this study is based on their experience teaching and use of ICT and related equipment.

The Cluster Tamil Schools in Pahang were chosen as the study site because this school is a Tamil national type school first received recognition as cluster schools in the state of Pahang. The school is almost equipped with ICT equipment such as an air-conditioned computer laboratory equipped with computers, displays, printers, and smart boards. Amenities such as a computer lab with 20 computers and a printer supplied and financed by the Ministry of Education since 2006. The smart board is funded by the school PTA (Parents and Teachers Association). In fact, three classrooms equipped with smart board (IQ Smart Board) donated by the PTA this school.

In this study, the researcher applied the theory of technology acceptance (Theory of Acceptance Model, TAM) as an instrument to identify the perceptions of teachers' acceptance of the use of ICT in teaching Tamil language. Model TAM formed by two basic elements, namely the perception or attitude toward the use and advantages of both, perception or attitude toward the use of information technology in the model introduced in 1986. Fred Davis Technology Acceptance Model (TAM) is a result of the development of the Theory of Reasoned Action (TRA), which first developed by Fishbein and Ajzen in 1975. The Technology Acceptance Model (TAM) is a model to explain the causality between the belief that (the use of computer technology and ease of use) and the behaviour of the objectives / needs. In the TAM model, underlying sentiment on acceptance rate of innovation refers positive or negative feelings for an individual to change his attitude. (Ajzen & Fishbein, 2000). Thus, a positive or negative act of acceptance of the use of ICT in teaching and learning for teachers can be identified through the TAM model.

4. Findings And Discussion

The study analysed the responses and their views based on questions posed by the researcher through interview and observation forms were made. Acceptance responding skills using ICT equipment like laptops, LCD and smart boards can be analysed as they use the equipment when teaching in their respective classes. Use of the computer lab also be used to find information and teaching materials with the help of the internet. In fact, there are some teachers find and prepare materials, ICT contained in the computer lab at school free time on the encouragement of fellow teachers include computer teacher. Those who have their own laptops do not have a problem to surf the internet at the school at any time to get materials and teaching aids such as pictures, graphics, cartoons, video clips to complete the slide in PowerPoint program or publisher to display in the classroom. On the average of all respondents can use all the facilities of existing ICT according to their respective capabilities in this school.

Figure 4.1, Figure 4.2 and Figure 4.3 shows a computer lab, a teacher computer access and computer classes in the classroom Tamil schools, which are used for this study. While diagrams 4.4, diagrams 4.4 and diagram 4.5 shows an example of teaching materials aids surfed through internet used by teachers in teaching and learning in this study.



Figure 4.1. The computer lab at Mentakab Primary Tamil School



Figure 4.2. The Teacher Computer Access Room at Mentakab Primary Tamil School



Figure 4.3. The Computer Classroom at Mentakab Primary Tamil School



Figure 4.4. Example Of Tamil Website are used as Teaching & Learning Material

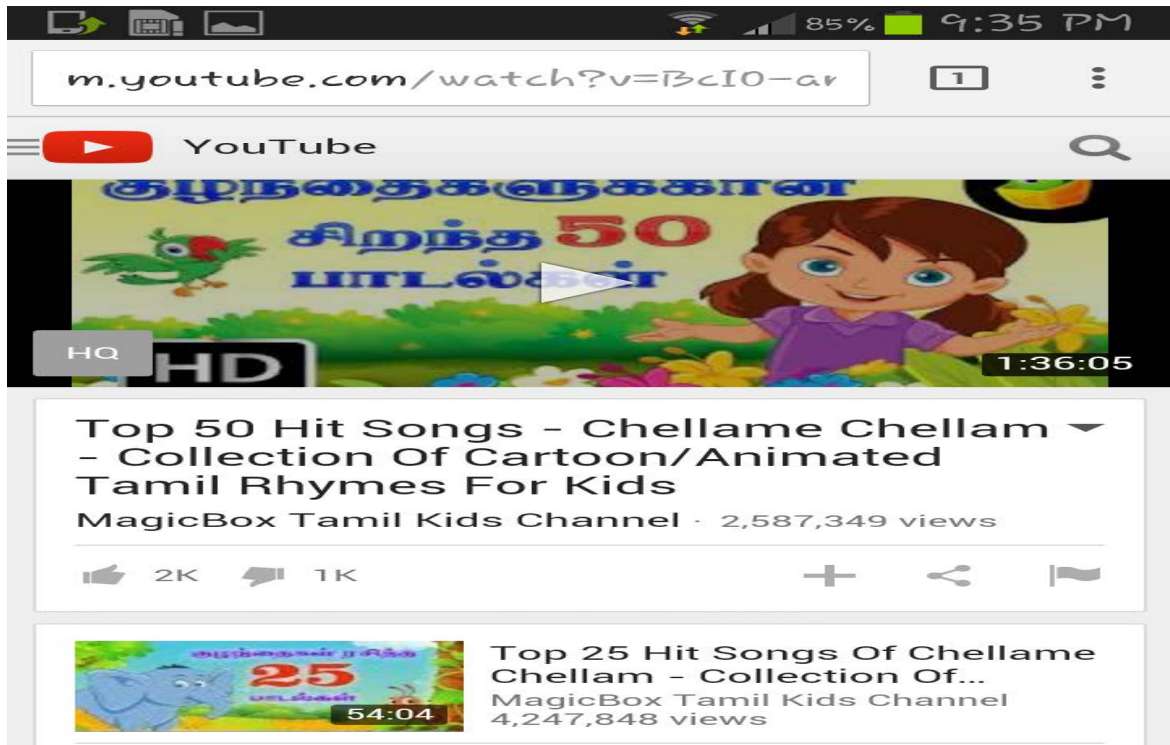


Figure 4.5. Example of Tamil Songs downloaded from YouTube



Figure 4.6. Examples of Facebook surfed by teachers from colleague to share reference book

The researcher capable to identify the role of ICT in teaching and learning among teachers in Tamil by visualization, fluency and assumptions of the respondents in this segment. The role of ICT in teaching and learning to play an important function in this factor. Respondents can tell the frequency of use of ICT in teaching and determining with the guided-time or time allocated for teaching Tamil language. Observations indicated that all respondents provide material aid to prepare for teaching and learning using ICT facilities such as a laptop or a notebook by using internet network at school or at home. Access to those applied depending on the speed of Internet network that they use is uncertain and limited.

Respondents also have the skills to surf the internet to find the information required to develop teaching aids for processes of teaching and learning easily without the need to study the books of textual characters. At the session of observation and interview respondents could give feedback along the acceptance of using ICT in teaching Tamil Language. Admission session the use of ICT by teachers that teach Tamil language to ensure their frequency and sensitivity towards the role of ICT equipment like laptops, LCD, smart boards in classrooms and computer laboratories for instruction and learning Tamil language.

The analysis of this section shows the perception of acceptance among teachers use ICT in teaching and learning Tamil language is positive. Here are the results from interviews carried on.

Respondent 1 (R1), stated that the role of ICT facilities and the role of the computer lab was to find teaching & learning materials, the following experience:

"Even earlier, though I was not so good in using ICT facilities at school, but nowadays I almost adept utilising this facility with tutoring colleagues. Today I possess almost the time using ICT facilities such as IQ Board, LCD and laptops in the classroom. The computer laboratory is also utilized to make materials, related soft copy from search engines like Google and Yahoo to recover images, graphs and charts related to teaching & learning Tamil language." (R1)

The results of the observations of the respondent R1 show that ICT facilities such as smart boards, LCD, laptops and Internet networks fully used to provide teaching aids material such as pictures, graphs and charts related to teaching & learning Tamil language. Even found also substances prepared teaching aids can also be replicated and stored in pendrive to reused or passed on to other teachers.

Respondent 2 (R2), said depending on ICT facilities, the amount of time and the grandness of the Internet for teaching and scholarship. He said:

"I'm strongly depend on ICT facilities in schools. I use the IQ Board, LCD and laptop at least 9-10 hours of the 12 hours allocated to teach the subject Tamil language. The use of ICT facilities is necessary to teach Tamil language because software and teaching materials can obtain through internet search they need to prepare teaching aids in a short time and accurately." (R2)

Based on the reflections of the respondent 2 (R2), the use of ICT facilities becomes very important in the teaching and learning process. On average, about 80 percent of the entire instructional time with the aid of ICT utilization in the teaching of Tamil. This means that the respondent is strongly dependent on the role of ICT tools, especially Internet use in teaching and learning Tamil language also saved their workload time.

Respondent 3 (R3), an opinion based on the role of ICT facilities such as:

"I feel relieved using ICT facilities such as IQ Board, LCD and laptop for ease of usage. I'm getting to the computer lab during recess to find teaching material using the Internet. Sometimes I use a smartphone during recess at school and at home to seek for information through the net. I frequently talk to colleagues identified through Facebook to exchange teaching aids material." (R3)

Based on respondent 3 (R3), ICT facilities available during the intermission to prepare teaching materials. Smartphones and Facebook used to discover data on the Internet for the culmination of the teaching aids for teaching and learning process Tamil language. The teaching aid materials can be shared with colleagues through Facebook.

Respondent 4 (R4), said frequency using a laptop owned and share material to fellow colleague. She said:

"I always use ICT facilities such as IQ Board, LCD and laptop computers, available in classrooms to teach Tamil language in the classroom. The time allotted is 12 times as though not enough. I own a laptop that

can be used at any time as mine. I often use PowerPoint program for preparing teaching and learning slides. Sometimes I have converted teaching aids material prepared in the form of softcopy copied in pendrive and given to colleagues. "(R4)

Referring to respondent 4 (R4) observation and interviews available shows ICT use in classrooms and even the amount of time allocated is not enough. This shows the use of ICT in teaching and learning Tamil language hundred percent applied in the classroom. Pendrive is used to copy and store the teaching material can be shared with colleagues.

Respondent 5 (R5), explains the dependence on ICT facilities to ease the work of teaching and learning. He stated:

"I often use ICT tools in teaching Tamil language because the use of ICT facilities in classroom ease the energy and time saving for the implementation of teaching and learning. I can only use as much as 8-10 times out of 12 times that is allocated for use IQ Board, LCD and laptops in the classroom. The use of ICT in teaching and learning Tamil language save time and energy when operating the classroom. "(R5)

Based on observations of respondents 5 (R5) found the use of ICT tools in teaching and learning Tamil language fully able to save time for the implementation of ICT in teaching and learning. There are savings of time and energy managing the implementation of a teacher during teaching and learning process in the classroom.

Respondents 6 (R6), describes the use of computers and smart phones ease the work of teaching and learning. He said that:

"The work of preparing the teaching aids does not become another barrier in the presence of ICT facilities. I really depend on ICT facilities are available at the school . Laptops and smart phones also make it easier for me to explore teaching aid materials by visiting the websites related to Tamil language. Almost every day I make use of ICT in the classroom, which is certainly an attraction to students "(R6)

Based on the observations of the respondent 6 (R6) is also available to facilitate the use of ICT in teaching and learning process in the classroom. Respondents acknowledge that the use of ICT equipment like laptops and smartphones to facilitate the exploration of teaching materials network with internet facilities that are available at the school. The use of ICT facilities in class every day to attract students in the classroom.

Overall, the results of all respondents concluded the interview responses to three themes: 1) perceived ease of use of ICT, 2) the use of ICT in teaching skills, and 3) attitude towards the acceptance of the use of ICT in the teaching process.

Theme 1: Perceived Ease of Use On Using ICT

According to Suwarnee (2006) have also seen the willingness of teachers to use ICT. Results of research showed the attitude of teachers towards the use of ICT in teaching and learning is at the high level and positive attitude towards the use of ICT in teaching and learning. Apart from saving time in searching for information via the internet only takes a few minutes compared with manually searching in libraries, Internet use by teachers in the subjects taught in the diversity of its teaching pattern, such as teaching by simulation that allows students to look and feel like a real situation.

Thus, the ease of use of ICT in teaching and learning of Tamil language as a computer lab, smart boards, desktop computers, laptops, LCD and internet networks overwhelming impact on students. This is because ICT aided learning students can diversify reference material because it can be applied to various learning activities, such as text, examine the images, video graphics and visual. In addition, students are not necessarily tied to a learning style for ICT aided learning can deal with differences in students by not only focusing on one individual to follow teaching according to their abilities (Sharifah Alawis, 1987).

In fact, indirectly help enhance understanding and increase student achievement as well as to improve the skills in the use of ICT in teaching and learning Tamil. Virtually all respondents use ICT facilities in all schools during the process of teaching and learning in the classroom Tamil language even outside the classroom. In conclusion, the average, respondents use ICT facilities for teaching and learning Tamil language. On the average, the respondents in the interview admitted that the use of ICT to make teaching and learning easier, concise because the students will be exposed to the description and presentation of interesting and easy to

understand. Thus, the use of ICT in the teaching of Tamil language by the respondents in this school is evident positive impact of ICT use reception.

Theme 2: The Use Of ICT In Enhancing Teaching Skills.

Based on the findings, the respondents can build skills in using ICT in teaching and learning Tamil language in primary school. The use of ICT equipment in classrooms, prepare teaching aids quickly and easily learn the skills of ICT use by colleagues. They often teach and share experiences among colleagues through forums, email, facebook, twitter and video online. The respondents were almost able to use all ICT facilities such as computer labs, desktop computers, laptops, smart boards, internet, wifi, pendrive and LCD. In fact, the smartphone is owned by the respondent is also used to surf the Internet on school grounds or at any of them are out of school to find materials for teaching and learning.

The results showed that the use of ICT has grown rapidly since then until now used in teaching and learning. Their application is appropriate to the needs of students because it can increase the participation and achievement when ICT is used effectively (Wegerif & Dawes, 2004). A study conducted by Siti Zuraida et al (2003) explains that the use of computers can improve efficiency and encourage potential skills such as imagination, creativity and logic and critical thinking among the users of ICT in teaching and learning.

Theme 3: Teacher Attitudes Toward ICT Acceptance In Teaching.

This finding is also supported by several previous studies on acceptance attitude towards the use of ICT in teaching either in English or other subjects. Among the research studies that have been conducted against teachers is like the study Hamzah (2003), Mohd. Khayr al-Din (2005), Suwanee (2006), Nor'aini (2007), and Fairose (2007). The results of this study also received support from research in other subjects, including studies Abdul Malek (2002) which reviewed the use of ICT in the subjects of the humanities and vocational streams, while M. Nadarajah study (2002) looked at the use of ICT for the eyes Economic studies, while Mohd. Jasmy, Mohd. Arif, and Norsiaty (2003) has conducted studies on the subjects of science and mathematics. The study also found that teachers have a positive attitude towards the acceptance of the use of ICT in their teaching.

5. Conclusion

Overall, the findings of a study found that the perception of acceptance by the teachers' use of ICT in teaching and learning Tamil language which is a positive receipt of the use of ICT is very important for improving the quality of teaching and learning Tamil and attracting students learn in the classroom. These findings are important to the Curriculum Development Centre (CDC), Ministry of Education as a result of this study is expected to serve as a guide for applying the use of ICT for teaching fulfil their obligation, especially for Tamil Language in primary Tamil school.

The study is also expected to serve as a basis for holding a guide or reference book for language teachers who want to teach Tamil to aid the use of ICT in National primary Tamil schools throughout the country. The committee can figure out how to interpret the curriculum content into a form suitable for background Indian students based on current ICT developments. In fact, this study can help teachers understand the use and acceptance of ICT in the teaching Tamil Language in primary Tamil schools.

Several suggestions were made between researchers suggest amenities such as network speed internet networks in schools needs to be improved to launch broadband speed so as not boring teacher speed to access and download software teaching material in the form of text, graphics, video and animation segments. Speed internet network is very important to save time and attract teachers who are always looking for a space of time for the completion of the teaching aids for the teaching and learning process. It is suggested that the Parent Teacher Association (PTA) should play an important role in providing ICT facilities or finance from external financial resources contributed. This is because most of the Tamil schools with the status of capital assistance may be problematic for providing ICT facilities in schools. The financial allocation for school administration can't afford to finance the cost of maintenance of ICT. Noble efforts of the PTA can minimize the lack of ICT facilities. Even the Ministry of Education should also consider giving financial assistance allocated for the provision and maintenance of ICT facilities in Tamil schools with the status of not full aided by government.

A more in-depth follow-up study is expected to be carried out using other methods such as quantitative research, experimental, design and development and so on to see the acceptance of the use of ICT in teaching and learning the Tamil language to be more effective and in keeping with the changing times.

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THE DETERMINATION OF SCIENCE TEACHER CANDIDATES' IDEAS ON CELL SUBJECT THROUGH DRAWING METHOD**

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Abstract: Though science teacher candidates know the cell subject in theory, they cannot connect the relation between the cell and its organelles exactly. With this study, using drawing method to ascertain the ideas of the teacher candidates about cell subject, the importance of the use of the drawing method in assessments will be emphasized. In the study it is aimed to determine the science teacher candidates' ideas on cell subject through drawing. The study was carried out with 62 teacher candidates that study science teaching department second grade in 2012-2013 academic year fall semester. In the study survey method was used, which is one of the descriptive research methods. In the study the drawing test (Drawing Test Regarding Cell Subject) which was developed by researchers was used as data gathering tool and developed rubric was used for data analysis. According to the findings obtained from the study it can be said that teacher candidates generally have sufficient performance on cell subject. Although science teacher candidates know the basic parts of the cell they have misunderstandings about the places, shapes and the connections of the organelles. Besides, it can be expressed that the teacher candidates have inadequate information about the nucleus. In this context although teacher candidates know the cell organelles, they have lacking knowledge regarding the shape-place-connections of the cell. In this study it is understood that they drew the nucleus at the right place however they do not know some parts or relatively know the parts of the cell.

Key words: Cell, Drawing, Idea, Science, Teacher candidate

INTRODUCTION

In order to sustain a regular and a healthy life individuals must know the nature and the living and must be sensitive towards them. As Gunes and Gunes (2005) suggest that the whole organic and inorganic environment that contain humans affect their daily life, development and health and realizing all these can be possible through learning biology subjects. The field of biology that searches the humans and the whole organic-inorganic beings is one of the science fields that have developed most and it affects human life a lot (Ekici, 2002). As a matter of fact biology is the life study that requires careful observation and explanation (Dempsey and Betz, 2001). In this context, it can be said that biology subjects have great importance in people's learning and acquiring basic life skills. Considering the fact that the foundation of the biology subjects is laid in primary school introduction to science and secondary school science courses, the importance of these lessons is increasing.

In science course, it is aimed to teach students basic science concepts, scientific process skills and acquire basic skills such as life skills. In this context, in science teaching it is aimed not only to acquire knowledge but also to develop the strategies that will help students in the process of the development of relations between concepts and sub-concepts (Calik, Ayas and Unal, 2006). In any case conceptual learning is one of the important parts of science teaching (Joung and Gunstone, 2010). In order to actualize this, students need to understand the concepts and rewire them in their minds. In constructivist approach and inquiry based learning that take place in science studies, a philosophical understanding in which information is generated by students, participators are active and take responsibility in learning process is based (Kahveci, 2010). Within this concept together with the active learning approaches that students will learn through research in the process their conceptual learning will occur as well. Through conceptual approaches students form images and models relating the events and concepts in their minds. Individuals' mental and cognitive model creation is based on their past experiences, current ideas and pre-knowledge in order to explain and interpret the events in the world (Moseley, Desjean-Perrota and Utley, 2010). Especially while learning abstract science concepts, it is very important to form true images, if students have not formed an image about a subject in their minds yet it means they have not identified that concept (Kavak, 2007). In this context it is significant to form images in students' minds relating concepts and to help them make connection between concepts.

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When the secondary school science course curriculum is observed 'Living Things and Life', 'Substance and its Evolution', 'Physical Events' and 'The Earth and The Universe' consist of learning areas (MEB, 2013). It can be said that 'Living Things and Life' learning area consists of biology subjects such as the basic structure and diversity of the living, structure, organs and systems in organisms. Some of these subjects are understood easily by students, however some subjects that contain abstract concepts are perceived difficultly. As Kete, Horasan and Namdar (2012) state one of the determined problems in teaching biology is that abstract concepts and some events may not be perceived easily by students. In this concept it is thought that the subjects that contain abstract concepts in biology must be paid attention on. It is stated that the number of studies relating how students rewire their biology knowledge is rare and contradictory (Teixeira, 2000). In this concept it is thought that the study relating how students restructure the cell subject, which is taught and perceived difficultly in science lesson, is significant in terms of literature.

When the subjects that take place in biology, it is seen that subjects like photosynthesis, respiration, cell, genetics are perceived difficultly. In their studies in Scotland, Bahar, Johnstone and Hansell (1999) stated that water transfer in plants and genetics are some of the subjects that participators have difficulty in biology. Atilboz (2004) states that since mitotic and meiosis division happen at microscopic level students may have difficulty in imagining it in their minds perceptibly and configuring these concepts. Also Flores, Tovar and Gallegos (2003) expresses that, the cell is a theme that is explained difficultly for students at different education levels. Because, the complex and microscopic nature of the cells makes it difficult for students to separate the cells and their contents (Maras and Akman, 2009). On the other hand, in the event that the cell subject is understood and perceived, the other subjects of biology will be perceived generally (Tasdelen and Guven, 2012). Within this context it is considered important to determine how the cell subject is perceived by students and how they connect the relations, in terms of laying foundation of biology subjects. In the study it is aimed to determine the ideas of science teacher candidates considering the cell subject and to use the drawing method for this purpose.

The drawing method is a method that enable students express themselves freely without any constraints and allow the conceptual structure in their minds with its details therefore makes it possible to gather information at first hand (Tokiz and Sasmaz Oren, 2011). Drawings aim to reveal the hidden knowledge and beliefs of students in order not to remain them limited with words (Ayas, 2006, 103). In other words the purpose of drawings is to bring out the ends positions on word-diagram searching an understanding deeply (Aydin, 2011). Considering the fact that the drawing will be productive for students in terms of permanence, it can be used both for the lecturing and the evaluating part (Çelikler and Topal, 2011). Though many students dislike answering questions they consider the drawings as an easy, enjoyable and fast way that they can fulfill (Kara, 2007; Kose, 2008). In addition drawings are used as the reflector and pointer of personal identities for years (Weber and Mitchell, 1996) and provide convenience in comparisons at international level (Prokop and Faneovieova, 2006).

Drawings are used in many ways in order to search to understand science (Dove, Everett and Preece, 1999). When the literature is observed it is seen that the drawings are used to determine the ideas, views and knowledge of participators on the subject of carbon hydrate and water cycle (Celikler and Topal, 2011), light (Kara et al. 2008), Newton's laws (Kara, 2007; Uzunkavak, 2009), microorganism (Saka and Ayas, 2002), scientist (Kaya, Dogan and Ocal, 2008; Korkmaz and Kavak, 2010; Unver, 2010), human body (Cerrah Ozsevgec, 2007; Patrick and Tunnicliffe, 2010; Prokop and Faneovieova, 2006; Reiss and Tunnicliffe, 2001; Reiss et al. 2002), digestive system (Rowlands, 2004; Teixeira, 2000), animal skeletal system (Tunnicliffe and Reiss, 1999), animal inner structure (Prokop, Tunnicliffe and Diran, 2007), environment (Moseley et al. 2010), biological legacy (Chin and Teou, 2010) and water/water cycle (Dove et al. 1999). As it is understood it is seen that the drawing method is used in order to determine the ideas of students on different subjects of science.

When the studies on cell subject in literature are checked there are some studies in which the knowledge, understandings and misconceptions of the participators about the cell division (Atilboz, 2004; Dikmenli, 2010; Emre and Bahsi, 2006; Harman, 2012), genetics/gene (Bahar, Johnstone and Sutcliffe, 1999; Lewis, Leach and Wood-Robinson, 2000; Lewis and Wood-Robinson, 2000) subjects/concepts are determined. In literature there are some studies in which understanding cell concept and the effects of different programs (computer supported education, touch technology) are analyzed (Jones et al. 2006; Minogue et al. 2006). Moreover, there are studies in order to determine the understandings of the participators about cell genetic (Wood-Robinson, Lewis and Leach, 2000) and their misconceptions about the cell subject (Gencer, 2006; Kete et al. 2012; Storey, 1991). Also in literature there are some studies intended to determine the understandings of plant and animal cell subject (Topsakal and Oversby, 2012), the cell and its functional relations (Flores et al. 2003; Maraş and Akman, 2009) the cell-organelles-their locations (Yorek, 2007; Sahin and Ugulu, 2010). As it is seen although there are studies on cell subject in international literature, in Turkey there are few studies on this matter. Within this

context it is thought that a study which will be done with a sample that takes place in Turkey about the cell subject will be significant in terms of national and international literature. Besides these is not any study that determines the ideas of participators in-deeply about the cell subject. Therefore in order to see the relations between the ideas of the participators about the cell subject and cell-organelles-nucleus the drawing method was used. In this context in the study it is aimed to determine the ideas of science teacher candidates who will teach cell subject in secondary school.

METHOD

In the study since the purpose was to analyze the ideas of science teacher candidates about the cell subject in-deeply, survey method was used. The survey method is a type of research which is practiced to detect the current situation (Cepni, 2010; 65). Survey method is a method used for obtaining much data from people in large numbers generally in a statistical form (McNeil and Chapman, 2005). In the study within this context the survey model was considered appropriate since it was aimed to detect current situations of teacher candidates in cell subject.

Participants

The study was performed in Dokuz Eylul University Faculty of Education, which is located in Turkey's East region, in 2012-2013 academic years. 62 teacher candidates that study science teaching department second grade participated the study. While choosing the teacher candidates it was taken note of that they had taken 'General Biology I' and 'General Biology Laboratory I' classes. In this context the participators were chosen purposefully. Purposeful sampling generally as well as being a feature of qualitative researches, researchers are determined depending on certain required specifications or their own decisions (Cohen, Manion and Morrison, 2007). 55 of the teacher candidates who participated in the study are female and 7 of them are male. Also while 32 teacher candidates attend formal education, 30 of them attend evening education.

Data collection

The drawing test (Drawing Test Regarding Cell Subject) which is developed by researchers was used in the study as the data gathering medium. In this context it can be said that open-ended questionnaires were used in the study. As Dawson (2002) states open-ended questionnaires as well as being used in qualitative researches do not include tick boxes, instead there are blanks given to write answers. In the drawing test the teacher candidates were asked to choose one of the plant or animal cell and to draw this cell on the paper given. In addition the teacher candidates were asked to write the names of the parts and the organelles next to the drawing. In the process of data gathering firstly the students were announced what to do, it was expressed that the beauty of the drawing did not matter but how to draw what-how-where was important. The practice was performed during 'General Biology' lesson and took 15-20 minutes.

Data analysis

In the analyze of the data rubric (Drawing Test Rubric Regarding Cell Subject) which is developed by researchers was used. While rubric was being developed firstly the studies that take place in literature were examined and the dimensions of the rubric were decided. In this context the rubric was decided to consist of basic parts of the cell, organelles and nucleus dimensions and also every dimension to consist of sub-dimensions of part-place-shape connection. The point of each of these dimensions as well as being different from each other the highest point was given to the organelle dimension and the lowest point was given to the nucleus dimension. The points that participators took from each dimension were defined with four different levels as: 'insufficient, limited, sufficient and perfect'. The highest point to be taken from this rubric is 100, the lowest point is 25. Rubric takes place in Table 1.

Table 1: Drawing test rubric regarding cell subject

Dimension	Sub-Dimension	Insufficient Performance (1p)	Limited Performance (2p)	Sufficient Performance (3p)	Perfect Performance (4p)
The Basic Part of the Cell (8)	The part of the cell (2)	No drawing	1part	2 parts	3 parts
	The places of the parts (2)	Stated in the right places with 3 missing	Stated in the right places with 2 missing	Stated in the right places with 1 missing	All stated right place
	The shapes of the parts (2)	Missing in the drawing of the shape of 3 parts	Missing in the drawing of the shape of 2 parts	Missing in the drawing of the shape of 1 part	All parts stated drawn correctly
	The inter partial connection (2)	Missing in 3 connections	Missing in 2 connections	Missing in 1 connection	All connections indicated clearly
Cell Organelles (12)	The organelles (3)	0-2 organelles	3-4 organelles	5-6 organelles	7 organelles
	The place of organelles (3)	Stated in the right place with 5 or more missing	Stated in the right place with 3-4 missing	Stated in the right place with 1-2 missing	All stated in the right places
	The shapes of organelles (3)	Missing in drawing of the shape of 5 or more organelles	Missing in drawing of the shape of 3-4 organelles	Missing in drawing of the shape of 1-2 organelles	All organelles indicated well drawn
	Inter organelles connections (3)	Missing in 5 or more connections	Missing in 3-4 connections	Missing in 1-2 connections	All connections indicated clearly
Nucleus (5)	The parts of the nucleus (2)	0-1 part	2 parts	3 parts	4 parts
	The places of the nucleus (1)	Stated in the right places with 3 or more missing	Stated in the right places with 2 missing	Stated in the right places with 1 missing	All stated in the right places
	The shapes of the nucleus' part (1)	Missing in the drawing of 3 or more parts' shape	Missing in the drawing of 2 parts' shape	Missing in the drawing of 1 part's shape	All parts indicated drawn correctly
	The inter partial connection of the nucleus (1)	Missing in 3 or more connections	Missing in 2 connections	Missing in 1 connection	All connections indicated clearly

The data gathered in the study was analyzed using the developed Drawing Test Rubric Regarding Cell Subject. As a result of the analyze samples were included in order to determine the ideas of the teacher candidates regarding the use of the rubric and cell subject. Also in consequence of the analyze points like minimum-maximum values, arithmetic average were evaluated.

FINDINGS

The findings of the study consist of two basic titles as 'findings regarding the analyze of the drawings of the teacher candidates considering cell subject' and 'samples from the drawings of the teacher candidates regarding cell subject'.

Findings regarding the analyze of the drawings of the teacher candidates considering cell subject

In this section the qualitative and quantitative findings gained from the analyze are included respecting the science teacher candidates' drawings considering cell subject. In Table 2 the findings regarding the points that the teacher candidates took from the cell basic parts sub-dimension of Drawing Test Rubric Regarding Cell Subject.

Table 2: Findings regarding the points that teacher candidates took from the basic part of cell sub-dimension of rubric

Sub-dimension	N	Min	Max	Ort	SS
The basic part of the cell (8)	62	6	8	7.23	0.98
The places of the parts (8)	62	4	8	6.94	1.19
The shapes of the parts (8)	62	4	8	7.00	1.13
The inter partial connection (8)	62	4	8	7.13	1.12

As it is seen in Table 2 while the teacher candidates took 7.23 points from the cell parts, they took 6.94 points from the places of parts sub dimension. Maximum point that can be taken from the sub-dimensions of the basic parts of the cell is 8 and it is understood that some of the teacher candidates took these points. In this context, it can be expressed that science teacher candidates take part between the sufficient and perfect performance regarding the parts, places, shapes and connections of the cell. The findings regarding the points that science teacher candidates took from cell organelles sub-dimension of Drawing Test Rubric Regarding Cell Subject are included in Table 3.

Table 3: Findings regarding the points that teacher candidates took from the cell organelles sub-dimension of rubric

Sub-dimension	N	Min	Max	Ort	SS
The organelles (12)	62	6	12	9.05	2.34
The place of organelles (12)	62	3	12	7.89	1.90
The shapes of organelles (12)	62	3	9	5.90	2.17
Inter organelles connections (12)	62	3	12	6.58	2.09

When Table 3 is observed it is seen that science teacher candidates took 9.05 points from cell organelles sub-dimension, 7.89 from organelle place sub-dimension, 6.58 from inter organelles connection sub-dimension, 5.90 from shape of organelles sub-dimension. Maximum point that can be taken from each sub-dimension of cell organelles dimension is 12. Within this context it is understood that the teacher candidates have sufficient performance in cell organelles sub-dimension, sufficient and limited performance in organelle place sub-dimension, limited performance in inter organelles connection and organelles shape sub-dimension. The findings regarding the points that science teacher candidates took from nucleus sub-dimension of Drawing Test Rubric Regarding Cell Subject are given in Table 4.

Table 4: Findings regarding the points that teacher candidates took from the nucleus sub-dimension of rubric

Sub-dimension	N	Min	Max	Ort	SS
The parts of the nucleus (8)	62	2	8	4.48	1.97
The places of the nucleus (4)	62	1	4	2.23	.97
The shapes of the nucleus' part (4)	62	1	4	2.15	.94
The inter partial connection of the nucleus (4)	62	1	4	2.23	.97

When we look at Table 4 it is seen that teachers took 4.48 points in average from cell parts dimension, 2.23 points in average from cell parts place and inter partial connection sub-dimensions, 2.15 points in average from the parts' shape sub-dimension. When the rubric is examined it is seen that teacher candidates can take maximum 8 points from cell parts sub-dimension and 4 points from other sub-dimensions. Within this context it can be said that participators have limited performance in all sub dimensions of rubric's nucleus dimension. The findings regarding the points that teacher candidates took from Drawing Test Rubric Regarding Cell Subject are given in Table 5.

Table 5: Findings regarding the points that teacher candidate took from the sub-dimension of rubric

Sub-dimension	N	Min	Max	Ort	SS
The basic part of the cell (32)	62	20	32	28.29	4.05
Cell organelles (48)	62	18	42	29.42	6.91
Nucleus (20)	62	5	20	11.08	4.75
Total (100)	62	50	86	68.79	9.73

When Table 5 is analyzed as well as the maximum point that can be taken from the cell's basic parts dimension is 32, it is understood that teacher candidates took 28.29 points in average and showed perfect-sufficient performance. In cell organelles dimension the highest point that can be taken is 48 and the average point that science teacher candidates took was 29.42. In this context it can be stated that teacher candidates are between limited and sufficient performance. In the nucleus dimension of the rubric teacher candidates took 11.08 points. The point that can be taken in this dimension is 20 and teacher candidates have limited performance. In total of the rubric teacher candidates took 68.79 point in average. Within this context it can be said that teacher candidates have sufficient performance considering the cell subject. The findings regarding cell kind that teacher candidates prefer are given in Table 6.

Table 6: Findings regarding cell kind that teacher candidates prefer

Cell Kind	N	%
Animal Cell	46	67.7
Plant Cell	16	32.3

As it is seen in Table 6 while 46 of the teachers preferred to draw animal cell, 16 of them chose to draw plant cell. Within this context it is understood that science teacher candidates prefer animal cell more than plant cell. The findings regarding the organelles take place in the drawings of teacher candidates are given in Table 7.

Table 7: Findings regarding the organelles take place in the drawings of teacher candidates

Animal Cell			Plant Cell		
Organelles	f	%	Organelles	f	%
Ribosome	46	100.0	Endoplasmic Reticulum	16	100.0
Endoplasmic Reticulum	46	100.0	Golgi Apparatus	15	93.8
Mitochondria	44	95.7	Mitochondria	13	81.3
Vacuoles	43	93.5	Vacuoles	13	81.3
Golgi Apparatus	33	71.7	Plastid	11	68.8
Lysosome	28	60.9	Ribosome	11	68.8
Centrosome	24	52.2	Lysosome	4	25.0

When Table 7 is examined all of the 46 teachers who chose to draw animal cell drew ribosome and endoplasmic reticulum organelles. While 95.7% of science teacher candidates drew mitochondria 93.5% of them drew vacuoles animal cell. None the less, the fewest organelles drawn by teacher candidates are lysosome (f=28) and centrosome (f=24). All of the science teacher candidates who preferred to choose plant cell drew endoplasmic reticulum however, 15 of them drew golgi apparatus. On the other hand only 4 teacher candidate drew lysosome as an organelle of the plant cell. In addition 11 teacher candidates drew plastid but only chloroplast was indicated as plastid. Moreover 2 teacher candidates drew centrosome in the plant cell.

Samples from the drawings of teacher candidates regarding cell subject

In this section some samples from the animal and plant cell drawings of teacher candidates are presented.

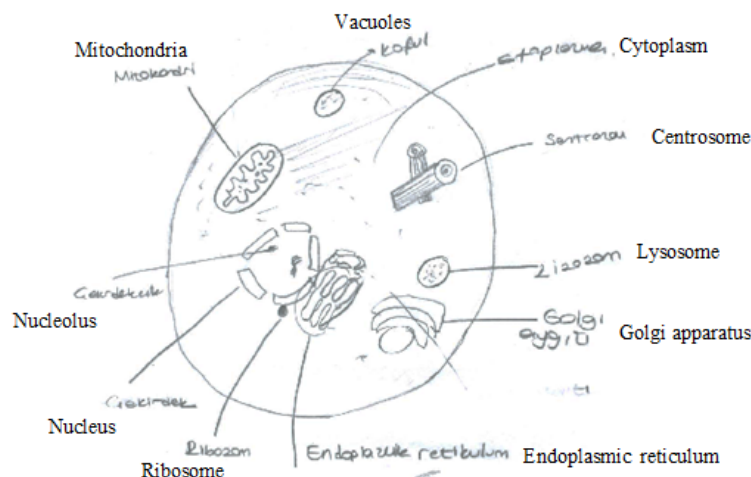


Figure 1: An example of an animal cell drawing 1

When Figure 1 is observed it can be expressed that teacher candidate preferred to draw animal cell and almost exactly drew the basic parts of the cell. However it is seen that the shape of the cell membrane is drawn absently and the pores among them were not presented. Besides, although all of the organelles that take place in an animal cell were drawn by the teacher candidate it can be said that there are some mistakes in the drawings of some of the size and places of organelles. For instance, while centrosome organelle should be located close to the nucleus it was drawn to a place away from the cell. Also while endoplasmic reticulum should lain to the cell membrane starting from the nucleus, it starts from the nucleus but does not reach out to the cell membrane in the drawings of teacher candidate. In the nucleus part only nucleolus was stated, nuclear membrane-chromatin thread-cytoplasm were not included.

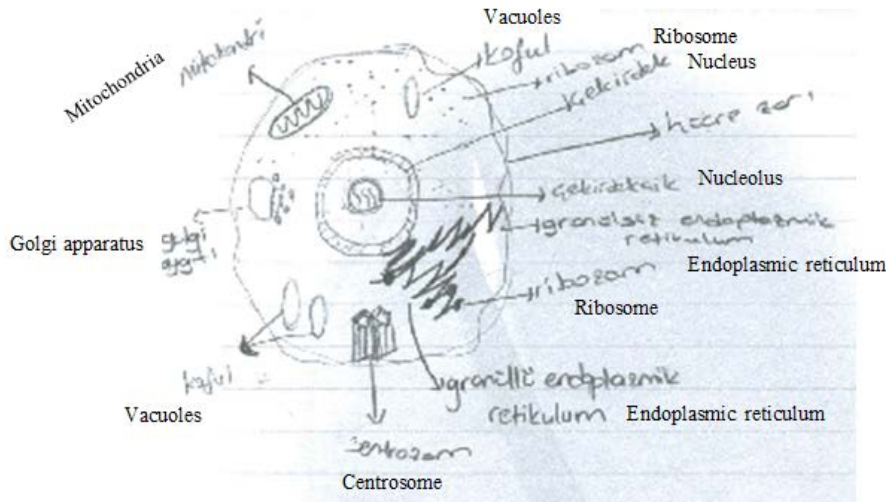


Figure 2: An example of an animal cell drawing 2

When we look at the Figure 2 it is seen that teacher candidate prefer to draw animal cell which is drawn round. Considering the organelles that take place in animal cell, it is understood that the teacher candidate drew every organelle except for lysosome. The teacher candidate drew the vacuoles small, showed the cristae matrix parts of the mitochondria. The endoplasmic reticulum was separated as granulose and agranulated and was drawn between the nucleus and cell membrane however, the shape of the endoplasmic reticulum was indicated inaccurately. In the nucleus part only the nucleolus was stated and cell membrane-chromatin thread-cytoplasm was not included.

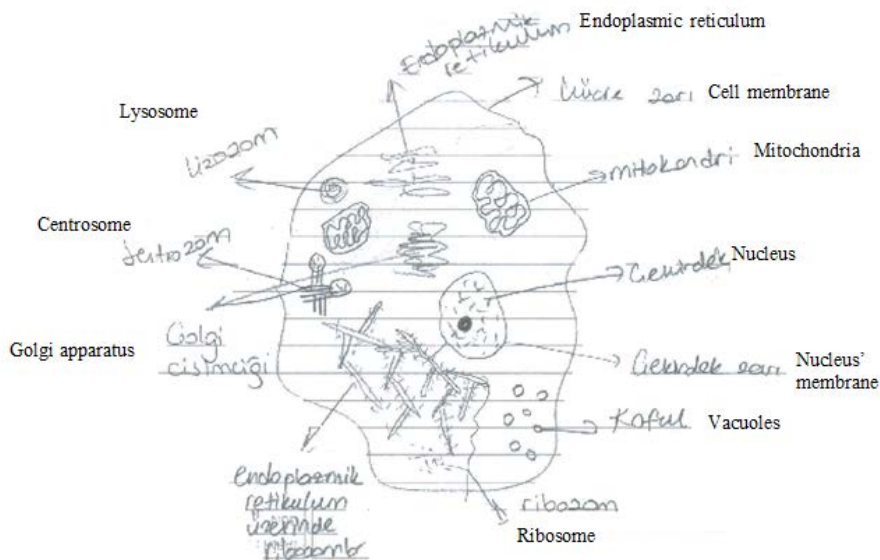


Figure 3: An example of an animal cell drawing 3

In Figure 3 it is seen that animal cell was drawn and cell membrane and nucleus were indicated however, cytoplasm was not stated by science teacher candidate. It is understood that only cell membrane was drawn in the nucleus part and the other parts were not drawn. The teacher candidate stated all the organelles in the animal cell however, it can be said that the size of the organelles and the connections between them have some inaccuracies. For instance, though mitochondria, centrosome and golgi apparatus do not have the same size, they were drawn at the same size. Whereas endoplasmic reticulum-golgi-lysosome generally should be drawn close to each other teacher candidate drew them at far points.

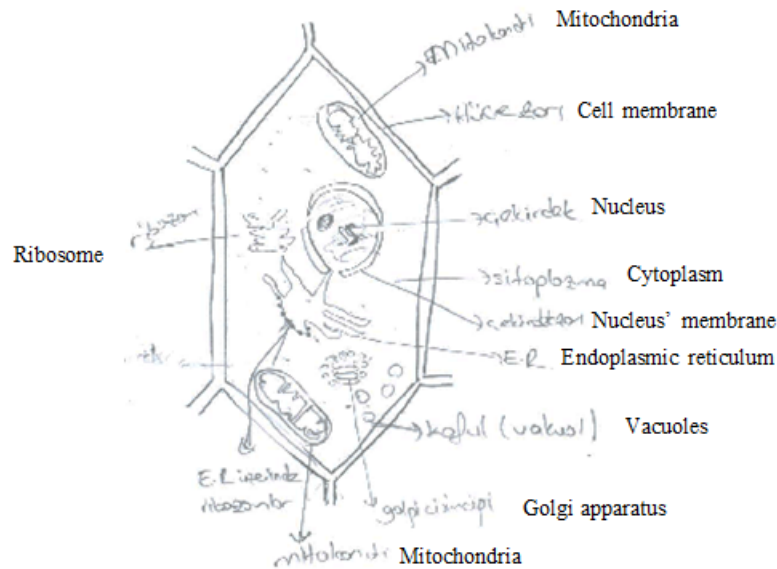


Figure 4: An example of a plant cell drawing 1

When Figure 4 is observed it is seen that the teacher candidate preferred to draw plant cell and drew it in an angled structure. Near the cell membrane cell wall was drawn but not expressed by teacher candidate. In the nucleus part only the nuclear membrane was indicated nucleolus-chromatin thread-cytoplasm was not included. Among the organelles mitochondria, ribosome, vacuoles, endoplasmic reticulum, golgi apparatus were drawn but lysosome and plastids were not shown. Although vacuoles are fewer and bigger in plant cell they were drawn smaller by teacher candidate.

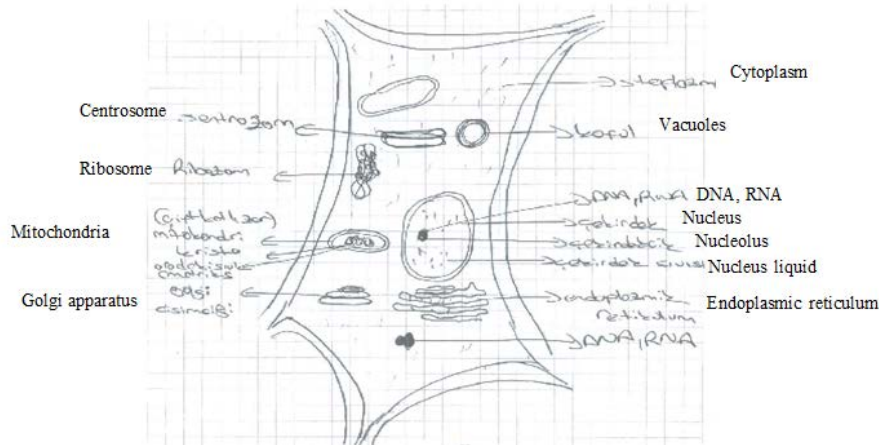


Figure 5: An example of a plant cell drawing 2

In Figure 5 it is seen that teacher candidate drew plant cell. Although cell membrane and cell wall were drawn they were not stated, and cytoplasm and nucleus were drawn appropriately. Even though all the organelles taking part in the plant cell were drawn except for plastids and lysosome, there are some deficiencies in their shapes. For example the connections of endoplasmic reticulum were not made and the size of the vacuoles was wrong etc. In addition centrosome organelle which does not exist in plant cell was drawn by teacher candidate. In nucleus part it can be said that other parts were drawn except for nuclear membrane.

DISCUSSION AND CONCLUSION

Cell is among the complicated subjects that are perceived difficultly by secondary school students and it might not be understood since it is a subject at micro level. The subjects that are difficult to understand for students become a handicap while understanding next subjects. In this context the determination of science teacher candidates' ideas on cell subject gains importance in terms of how they will teach the subject in the future. In the study it is aimed to determine the ideas of science teacher candidates regarding cell subject.

According to the findings obtained from the study it is understood that science teacher candidates prefer to choose animal cell more than plant cell. Similar results were taken in Yorek (2007) and Yorek et al. (2010)'s studies as well. It is thought that this situation results from the fact that in books and basic resources generally

animal cell example is given. Also considering the fact that human cells are made up of animal cell it is quite normal for participators to draw animal cell when they are told to draw a cell.

In the study science teacher candidates take place between sufficient and perfect performance respecting parts, place, shape and connections of the cell. Within this context it can be said that teacher candidates showed perfect- sufficient performance in the dimension of basic parts of the cell. As it is known teacher candidates start to learn the cell subject beginning from the secondary school and process it at different levels of education. Within this context it is an expected result for teacher candidates to have perfect-sufficient knowledge and understanding respecting the basic parts of the cell. When the literature is observed in Yorek (2007)'s study it is confirmed that the place of the nucleus is comprehended well, but the locations of the cell membrane and cell wall are mistaken.

As a result of the findings gained from the study it is understood that science teacher candidates have sufficient performance in the cell organelle sub-dimension. However teacher candidates have sufficient and limited performance in cell place sub-dimension, and they have limited performance in inter organelle connection and organelle shape sub-dimensions. As it is understood it can be expressed that, teacher candidates take place between limited and sufficient performance in cell organelle sub-dimension. In this context although teacher candidates know the cell organelles, they have lacking knowledge regarding the shape-place-connections of the cell. Kete et al. (2012) in their studies stated that the students have incomprehensibility about the location and structure of endoplasmic reticulum among other cell organelles. In our study teacher candidates generally drew the organelles round and put it randomly between cell membrane and nucleus. In similar studies in literature (Yorek, 2007; Yorek et al. 2010) it is determined that students memorize the names of the organelles rather than comprehending the structure and function of the organelle and put them randomly between nucleus and cell membrane. In Maras and Akman (2009)'s studies it is determined that students learn the names of the cell organelles easily however the students find it quite complicated to relate the cell organelles with their functions.

In the study it is understood that science teacher candidates mostly drew endoplasmic reticulum and mitochondria in both animal and plant cell. Besides in animal cell; ribosome and in plant cell; golgi apparatus are among the organelles drawn mostly. In Yorek (2007)'s study the most indicated organelles by 9. and 11. grade students were nucleus, cell membrane, cell wall, vacuoles, endoplasmic reticulum, mitochondria and ribosome. It is thought that mitochondria takes charge in producing energy and it is an important organelle for the cell affected teacher candidates. In addition due to the fact that endoplasmic reticulum has an interesting name makes it easier for teacher candidates to remember its name.

In the study teacher candidates preferred to draw lysosome organelle, both in animal and plant cell. Moreover, in animal cell; centrosome, in plant cell; ribosome and plastid were drawn by fewer teacher candidates. Because, it is thought that centrosome only exists in animal cell and plastid only exists in plant cell. Also teacher candidates only drew chloroplast as plastid. In addition to this, some teacher candidates drew centrosome in plant cell. These can be considered as mis-learning and misunderstandings that teacher candidates have. Other studies in literature (Emre and Bahsi, 2006; Harman, 2012) indicate that students have missing or wrong information about cell divisions.

According to the findings obtained from the study teacher candidates have limited performance in all sub-dimensions of rubric's nucleus dimension. Yorek et al. (2010)'s studies it is ascertained that participators drew the location of the nucleus correctly. In this study it is understood that they drew the nucleus at the right place however they do not know some parts or relatively know the parts of the cell.

As a result of the study it can be expressed that teacher candidates have sufficient performance in cell subject. Although science teacher candidates know the basic parts of the cell, they have misunderstandings about the place, shape, connections of the organelles. In addition, it can be said that teacher candidates have lacking knowledge about the nucleus. In the studies of the literature (Gencer, 2006; Maras and Akman, 2009) it is understood that the participators have difficulties in comprehending the cell subject. As Gunes and Gunes (2005) suggest, it is determined that the students that are at the level of finishing secondary school, have difficulties in understanding or they never understand the basic subjects of biology (such as cell division, plant or animal tissues, chromosome and genes, the bio-incidents and ATP energy).

RECOMMENDATIONS

According to the findings obtained from the study it is confirmed that the cell subject, which is one of the basic subjects of biology, is difficultly understood by students and teacher candidates. In order to determine the ideas of teacher candidates drawing method was used. Tasdelen and Guven (2012) stated that the drawings that are

used in cell biology class helped students understand the subjects better. In this context, it is thought that there is a need for studies to confirm the fallacies in comprehending, knowledge and conceptions of the students at different levels using the drawing method.

According to the results taken from the study it can be stated that the understanding of teacher candidates in cell subject is at intermediate level. In order to increase the understanding level of teacher candidates it is thought that it will be appropriate to use methods and approaches that appeal to visual based constructivist approach. In the studies of the literature Dogan (2008) suggests that project based learning and Onder (2011) states that constructivist 5E learning model is effective in cell subject. Within this context, it can be said that the studies in which the ideas for cell subject will be determined and the effect of visual based methods will be confirmed, are going to contribute to the literature.

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THE MOTIVATIONAL FUNCTION OF THE GRADE

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Abstract: The grade of students' achievements, with all its weaknesses, is a form of feedback through which the students are informed about the effects of the process of learning and the results of the effort they put. It is assumed that this sort of feedback has a motivational impact on their future work in the teaching process.

In the educational process, the teacher should constantly work on the development of the students' confidence and the development of the motive for achievement, because it is a very important factor that enables proper experience of the feedback on the students' individual achievements. The motive for achievement is an important factor in the student's performance. Taking into account the impact the grade has not only on the students, but on the parents and other entities interested in the students' achievements too, the paper examines the motivational function of the grade through surveys and informal interviews conducted with students and teachers, i.e. an examination of how much the grade as a number, obtained in the teaching process as feedback, influences the students' motivation to learn.

Keywords: grade, motivational function

INTRODUCTION

One of the roles of teaching is to develop the students' desire to learn, stimulate their interest and direct their behavior. The work in the classroom should give the student a sense of satisfaction through understanding the meaning and the purpose of learning, i.e. to motivate him to achieve good results, because the extent of the student's interest in teaching and learning in general depends on his motivation. The goal of every successful teacher is to constantly encourage motivation, to stimulate and develop it, until it becomes part of the student's personality, and this in turn affects the durability and the quality of the students' achievements. He should encourage the sense of curiosity and satisfy the desire for new knowledge, without neglecting the external incentive forms that stimulate the development of internal motivation.

The motive for achievement, similar to the motive for prestige, the one for self-affirmation etc., drives the students' personality towards activity. It is known that the students that have a highly developed motive for achievement want to reach greater success, have good grades, get involved in social activities etc., so that they can one day be experts in certain areas. The positive role of the educational institutions in the development of this motive as an aspiration for achieving socially acceptable goals, should not be particularly emphasized. In the teaching process, students should be encouraged to be independent in the realization of various activities, their successful behavior should be positively assessed and emotionally rewarded, and the satisfaction with the achieved success should be publicly expressed as well as the disappointment with failure.

REVIEW OF PREVIOUS STUDIES

Researches in the fields of psychology, pedagogy and didactics so far, show that the role of motivation in students' learning, the role of the teacher in developing and maintaining the motivation, and the analysis of the motive for achievement, are frequently elaborated topics. Motivation encourages learning, it is a requirement for successful

learning and successful learning motivates even more, (Danilović, 1998). Motivation is not permanent, it should be encouraged and developed in order to become part of the so-called internal motivation. In order for motivation to exist, certain needs or incentives that will lead to activities aimed at meeting them are necessary. The motivation for learning and the impact that the achieved success has on students' further learning are closely related to the motive for achievement. The motive for achievement is defined as an individual's tendency, in achieving a set goal, to compete with the standard of success, which is considered important and highly valued in the wider environment, (Havelka, 2000). The teacher should encourage the internal motivation, which refers to what the student is interested in, what pleases him, therefore one of the main tasks of the teacher is to develop interest in the material being studied, (Andrilović, Čudina, 1985). In schools where students are pressured to achieve better results, a correlation between the motive for achievement and the student's success does not exist, since that success is not a result of the student's initiative but a result of the school's persistence, (Rot, 1972). Students with a developed motive for achievement realistically select their goals, which leads to success in learning, while students who have a fear of failure set easy or hard goals, since it is not embarrassing to fail in the realization of difficult aims and light ones prevent from failure, (Atkinson in Andrilović, Čudina, 1987).

At the base of every activity, as well as learning, seen as the most complex form of mental activity, are the motives as driving forces that cause the individuals' activity, direct it and manage it, and accordingly, direct the process of motion of the individuals' activity, aiming the activity at certain objectives, and regulating the activity in achieving specific aims, (Rot, 1972, 213).

RESEARCH METHODOLOGY

In studying the problem of investigation, empirical research of descriptive character is applied, and the methods of scientific knowledge are the causal and the descriptive one. Through qualitative analysis, as an operating method, of the answers of the questionnaires for teachers and students, and through qualitative analysis of the informal conversations or the non-directive interviews with teacher, an attempt is made to consider their views and opinions regarding the importance and the motivational nature of the numerical grades that students receive for their accomplishments. Research procedures and instruments used for collecting data are: surveys and questionnaires to investigate the attitudes and the opinions of teachers and students towards the numerical assessment, and informal conversations with teachers about examining the causal link between the given grade of the students' achievements and their motivation for further work, learning and achieving success in the classroom. Questionnaires for teachers and students included closed and open-ended questions, which offered room for the surveyed subjects to express their opinion on the investigated problem.

The obtained data is qualitatively and quantitatively analyzed, while the quantitative review consists of determining percentage and average value.

In order to obtain more substantial and relevant information on the examined problem, the survey is conducted with the population of students in secondary school, which are expected to easily express their attitudes and impressions of the grades they receive. In that sense, the sample of participants included in the questionnaire is random and consists a total of 100 students and 50 teachers from three high schools in the city of Bitola (gymnasium "Josip Broz Tito". Gymnasium "Taki Daskalo", and technical high school "Gjorgji Naumov"). Informal conversations are also conducted with teachers. The random sample of students consists of ten students from ten classes, from first to fourth year in these schools. Also, the selection of teachers entering the sample is random, by a random choice of numbers

RESULTS OF THE QUESTIONNAIRE FOR TEACHERS AND DISCUSSION

The analysis of the teachers' attitudes towards the numerical grades that students receive, shows the following results:

Regarding the question of whether the lower grade encourages the students to work more, the teachers' views are divided, in other words almost 35% believe that the lower grade has a motivational impact on the students, while the remaining 65% believe that it doesn't motivate, it doesn't encourage, i.e. the lower grade does not contribute to students studying and working harder. This data, in turn, is an indicator that the connection of the grade with the increased or decreased students' motivation to learn, or put more effort, largely depends on the individual characteristics of the students' personalities, as well as the individual perception of the teachers. What is also indicative is the high percentage of teachers who believe that the grade does not encourage the student to work more, because that may indicate insufficient quality of the educational practice in all segments of its realization, and the

indifference of the students in terms of the received grade, which, in turn, implies the need to take urgent measures to improve the current situation.

In this sense, the problem of the lower grade has a psychological and didactic-methodical character. Overall, the psychological nature of the grade largely applies to the experience of the assessment, as well as the award and punishment in general, of the individuals in a particular situation, which are all completely individual experiences. To illustrate, we could use the fact that for certain individuals the award for the achieved success plays a very important role in the future progress and further success in learning, whereas among certain individuals the higher grade (usually the highest) causes a pleasant feeling due to accomplishment and in the case of obtaining it, by which they usually mean recognition (and is understood as a reward for the achievements), the need for display is satisfied, the need for acceptance and recognition in the group, status and place in the group is provided, and the need for superiority understood as an opportunity to express their abilities is satisfied. At the core of this response is the individual experience of praise, reward or reprimand and punishment, which, if given according to appropriate merits, timely and in an appropriate manner, lead to autonomy of these external motivators, making them part of the individual's internal motivation and continue as instigators of the activity (the grade accompanied by praise, some recognition and so on, encourages or inhibits activity). In the psychological and pedagogical literature, there is an assumption that in most cases among good and capable students, that satisfy the motive of achievement through assessment, in given situations of achieving lower results than expected, a lower grade will act better than a higher one as a merit of their previous work. Moreover, capable students are expected to reduce the desire for progress and they may lose their interest in achieving higher success by receiving a higher grade in cases with no actual ground for it. For students with low grades the situation is reversed, especially among introverted students with modest abilities who achieved lower results, but through the grade in cases where the grade was higher than the real one, they are encouraged to achieve better results in order to develop self-confidence and faith that they can reach greater success.

Regardless of the students' individual experience of assessment, their success should be constantly evaluated, and the appropriate grade, higher or lower, which is an important feedback by which they are informed about their achievements, should be aimed at encouraging further learning.

The question of whether the students are trying to master the material and get a better grade after they have received a lower grade than expected, on that same material or specific topics of it, shows that the teachers' attitudes are divided, i.e. according to 50% of the teachers, students put more effort into correcting the lower grade, and according to the other 50%, students show no interest in fixing their grades.

On one hand, this information is, to a large extent, identical with that obtained in the previous issue and questions the quality of the educational process, and, on the other hand, requires significant further research for the lack of interest and the unwillingness of a percentage of students to improve their achievements. Furthermore, the individual experience of the assessment, as stated above, is different among the students, which largely depends on how the given grade will impact the further investment of effort.

The insufficient grade has always been the focus of attention of all direct or indirect participants in the educational system, primarily, because of its specificity. Students with an insufficient (1) grade in a specific subject, are always expected to take measures to correct it, and thus improve their achievements. The teachers' views on whether the insufficient grade (1) encourages the student to work harder, as for the second question, are identical, i.e. 49% of teachers believe that the insufficient grade encourages students to put more effort, while 51% believe that the insufficient grade does not influence the increase of students' motivation for work at all. Although the teachers' attitudes result primarily from their individual perception of the developmental characteristics of the student's personality, as well as the differences that occur among the students, of cognitive, affective and psycho-motor nature, however, the large percentage of teachers who believe that the insufficient grade is not of stimulating influence is worrisome. These data confirm the attitudes of teachers towards the previous question, which is not about the insufficient assessment, so further dilemmas arise, relating to the insufficient motivation and the lack of students' interest to correct the insufficient grade and promote their achievements. Again, the reasons for this situation can be looked for in different segments of the realization of the educational practice. The greater percentage of students, who are not encouraged by the insufficient assessment, indicated the severity of the situation and a certain indifference of the students towards the insufficient grade, so, in this regard, urgent measures are needed to overcome this passive attitude of the students towards the insufficient assessment. The teachers' addition to the answer to this

question, shows the following: about 25% of them state that the only reason students study after getting an insufficient grade is to avoid taking a final exam at the end of the school year, so one can conclude that it is only important for students to get a pass-grade, no matter what it will be; about 20% claim that the insufficient (1) grade encourages improvement; nearly 30% point out that students do not like lower grades and always try to correct them; while 24% claim that some students are motivated to study more, and some are more discouraged. A fraction of the teachers, or 1% of them, say that the insufficient (1) grade makes the students lose their motive for studying.

Teachers are always faced with the dilemma on how to assess their students. In a case where the student's answer is not on a satisfactory level, according to the teacher, it is expected from him to react in an appropriate manner, on one hand, he has to be righteous and fair towards the other students, on the other hand, he has to be objective, and, yet, discover different methods of motivating the students. In this sense, relevant is the data obtained about the question of whether the teachers motivate their students by giving them the higher or lower grade, in cases where they score in between grades. 99% of teachers claim they give their students the higher grade, because, according to them, that encourages students. Some of the teachers say that the grade they give mainly depends on the students, but also the character of the material they have to master. Therefore, it is evident that the number of teachers that encourage their students by giving them the higher grade is greater, and that students prefer getting the higher grade. In this sense, the teacher should be particularly careful not to let his wish to motivate the students to lead to a wrong perception among them that he is a teacher that is very permissive and not strict. Only 1% of the teachers connect motivating the student by giving him the higher grade with his personality and the type of the material he needs to master.

The views of teachers from the previous question about the fact that the higher grade encourages students to improve their achievement, are confirmed with their responses to the last question on whether the award in the form of a higher grade motivates the students more for further learning. As much as 80% of teachers believe that the higher grade always motivates students to study more. Additions to their answers indicate the following: the higher grade always encourages students to study more in order to prevent the grade to be decreased, due do various objective and subjective factors; students want to justify high grades; students are more relaxed and communicate more easily with teachers as well as the environment. This indicates that, despite everything, the higher grade is still what increases the students' motivation for studying. Some teachers say that the award in the form of a higher grade can not be generalized to all students, but it depends on the student, individually. Nearly 20% of teachers say that the higher grade does not motivate students, and in addition to this answer they note that students do not pay attention to studying at all, show no interest and that nothing can motivate them. In this sense, from the views of the teachers it is clear that the higher grade encourages students to improve their achievement, but again, caution of the teacher should be stressed, so that the given encouragement is not perceived wrong by the students. On the other hand, the percentage of teachers that suggest that students cannot be motivated deserves a comment too, raising the question regarding this teachers' attitude and the very passive students' attitude towards studying and teaching, in general. It can be said that the reasons for the teachers' views on the indifference towards studying and the whole educational process, should and must be looked for in the realization of the educational practice. Without doubt, further research needs to be conducted on the given attitudes, in order to detect flaws on time, in order to improve the students' achievement and the quality of educational practice.

RESULTS OF THE QUESTIONNAIRE FOR STUDENTS AND DISCUSSION

The analysis of the students' attitudes towards numerical grades they get shows the following results:

Regarding the question of whether the grade motivates the student to study more or discourages him and reduces his will for further work, most students note that grade is a strong motivational factor for them to put more effort and promote their achievements. A small fraction of them, i.e. 15% say that the grade does not motivate them to study more and to put more effort, whereas a very small proportion of students consider that the grade does not affect their motivation at all. From the answers to this question, one can clearly see that the grade has a motivational function among most of the students, or it influences their willingness and their desire to better their achievements, which is a condition for the quality of the learning process and the quality of the educational practice in general. The percentage of students for which the received grade is not a motivational factor is worrying, as well as the percentage of students who believe that the given grade does not affect their motivation at all. Therefore, further studies to investigate this students' attitude are necessary, although, again, the reasons must be looked for in all segments of the educational work, the student's personality, as well as in the social environment.

It is in the human nature to try harder, invest more in order to express his maximum capacity. The answers to the following question on whether the students study more when they get a lower grade than expected, confirm that the majority of students, or 70% of them are trying to study more once they get a lower grade than expected, and that is certainly in the nature of the human's personality. About 30% of students note that they are not trying to study more, which may be a result of different factors that need further examination.

Regarding the question of how they feel when they get a higher grade than the one they believe to actually deserve, most students say that this teachers' gesture makes them feel happy, satisfied, fulfilled, rewarded, motivated, and even surprised. The students' answers given in addition to their views speak for themselves: getting a higher grade than the one they actually believe to deserve motivates them to study more, in order not to disappoint the teacher who encouraged and motivated them by giving them the higher grade; students connect getting a higher grade than the one they actually believe to deserve with an increased self-esteem and an increased enthusiasm for work; students believe that getting a higher grade than the one they actually believe to deserve makes them feel more responsible in terms of teaching and studying and trying to justify their teacher's trust by putting more effort into studying and promoting their success. It must be noted that, among other things, every teacher's priority should be the sense of happiness and satisfaction of students. Happy and satisfied students motivate the teacher to constantly improve his work and assure him he is on the right track in building individuals who will be able to meet the modern age's challenges. The teacher must know his students well and react even to their smallest impulses, in terms of noticing, assessing, valuing, and reward their efforts, too. A small part of students feel astonished and surprised, but still they try to justify the received grade. From the analysis, it is also clear that students prefer such a teacher, that will value their work and reward them. Only in that way, the teacher will successfully motivate students and contribute to improving the quality of learning and the teaching process in general.

The above mentioned is confirmed by the answers to the following question of whether lower grade encourages students to work and study more. About 54% of students say lower grades motivate them to invest their critical and creative potential in order to improve their achievements. 45% of students say that the lower grade does not motivate them to put more effort, and this is identical to the teachers' attitudes that a large percentage of students are not encouraged and that motivation probably depends on the student's personality. 1% of students note that their encouragement depends on the teacher and the subject itself, which is identical to the teachers' views on whether lower grades encourages students to study more.

The views of 20% of the teachers about the fact that students do not study at all and nothing can motivate them, are refuted by the students' answers on whether the insufficient grade (1) encourages them to work harder on the material they haven't previously mastered. 90% of students state that the insufficient grade (1) encourages them to work harder and put more effort, and that it is a strong motivational factor for them. Only 10% of students say that the insufficient grade makes them feel discouraged and quit studying and putting efforts. This, once again, shows that the teacher should be especially careful when assessing and well recognize the developmental characteristics of the students' personalities.

CONCLUSIONS

The analysis of the attitudes of both teachers and students gained through the questionnaires and from the informal talks enabled for us to reach significant conclusions regarding the motivational function of the grade. Namely, assessment in the teaching process in its essence understands for the individual to be informed for his/her achievements and the progress of the effort put forward, in such a way that he/she is pointed to the important aspects of what he/she is learning and how far he/she is with achieving the final goal. If the grade has this informative function with students it can lead to them feeling satisfied, stability, trustworthy regarding their own possibilities and inspires them for further work or, in a reverse situation, where because of untimely, or inappropriate grade, dissatisfaction, confusion and uncertainty can appear with the students which reflects negatively on the further learning process and reaching success. Based on that, it very likely that the multifunctional aspect of the grade can be further discussed, of its very important psychological sense and meaning, as well as of it conditionality of the individual perception of the same by individuals. This can be also proven with the analysis where the conditionality of how a grade is perceived is very clear as a reward for the effort invested which depends upon the individual characteristics, which, on the other hand, account to putting additional effort or resignation in the case of being assigned higher or lower grade than expected.

The analysis of the results of the questionnaires for the teachers shows that if the grade, that presents an integral part from the assessment process, is timely, adequate and corrective accompanied by oral feedback, generally, has a positive influence of the motivation for improving students' achievements. In these cases the students perceive the higher grade as an information that they have been successful in a certain activities and it is a direct information to the students that he/she is successful, and indirectly that he/she is a complete, capable and competent personality, while low grade is being perceived as an indicator that the effort showed is not enough. Further on, if the lower grade is accompanied by clear comments from the teacher on the account of concrete aims that need improving so that the achievements can be improved, with concrete pointing out to which activities are needed in order to do that, in which parts of the concrete assignments (where there was significant process noted), it is presupposed that the students won't be confused and insecure, that is, that the student will precisely understand what needs to be done, what needs to be corrected, improved so that he/she can have better results. With this kind of approach good students are being put forward, and students that are not so active, as well as students that show less satisfactory results, with the purpose to develop and strengthen the sense for one's own capabilities with the former, and to inspire the latter to improve and reach better results.

With the analysis of the questionnaires for the teachers, it is also indicative the percentage of the teachers that consider that the grade does not motivate the students to work more, which can point out to insufficient quality of the educational practice in all segments of its realization, as well as, to the detachment on the part of the students towards the assigned grade, that on its behalf, imposes the need of taking the necessary measures for improving the situation and putting emphasis on the grade to improve and increase the determination for reaching further and its connection to the motif of achievement. This situation is helped by the statements given by the students that say that lower grades do not influence them in an encouraging manner which just supports the establishment of the detachment of the grade that needs to be surpassed.

In this sense, having in mind the complex nature of the grade, the question being imposed at the very beginning is what the teacher can do to surpass this situation so that the process of grading can be improved and to enable students to reach better results in the teaching process and to be more motivated through appropriate grading. The answer to this question and to many other connected to the essence of the grade are found in the awareness of the teacher for the multifunctional aspect of the school grade and in solid knowledge of the pedagogical as well as the psychological problems, coming from the fact that the grade beside pedagogical and sociological, has its psychological sense and meaning. Having this in mind, the motivational component of the grade is an essential segment of the realization of the teaching process, and the feedback supported by the constructive interaction can lead to improvement of students' achievement in the teaching process.

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THE POST-CERTIFICATION PERFORMANCE OF MATHEMATICS TEACHERS

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Abstract: This study aims to describe the post-certification performance of mathematics teachers of vocational high schools in Wonosobo Regency Central Java province of Indonesia. This was a descriptive study with qualitative and quantitative approach (mixed method). The subjects were all mathematics teachers of vocational high schools in Wonosobo Regency who have passed the teachers certification. The instrument consisted of teachers' self-assessment questionnaires, observation sheets, interview guide and sheets of studies document. Data analysis techniques used with categorized performance trends into 5 groups: *Very Good*, *Good*, *Fair*, *Poor*, and *Very Poor*. The results of research are the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson is in the *good* category; the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation is in the *good* category; the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning assessment is in the *very good* category; the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in the professional development is in the *very poor* category and needs to be improved.

Keywords: performance of teacher, certification, lesson plan, learning implementation, assessment, professional development

INTRODUCTION

Indonesia nowadays is preparing for the ASEAN Economic Community (AEC) of 2015. The impact of this AEC is a free market in the field of capital, the goods and services, and the labor. The purpose of the establishment of the ASEAN Economic Community (AEC) is to enhance economic stability in the ASEAN region, and it is expected to overcome the problems in the economics between ASEAN countries. For all of that, Indonesia must have superior quality of human resources, because superior human resources will be able to bring the nation to face and win the competition in this AEC era.

The quality of human resources is determined by the quality of education. According to Berdo (2010), "... that the education factor plays in the formation and development of human resources." Education has an important role in the formation and development of human resources. Sihombing & Sihombing (2011) stated that the quality of education is largely determined by the quality of the teachers as het actor. Therefore, the teachers are required to be a professional and have high performance in order to improve the quality of the young generation that Indonesia can be an intelligent nation and able to face the future challenges.

The research results from *Pearson Learning Curve* in 2013 on quality of Indonesia's education mapping showed that Indonesia is in position 40 of the 40 countries (Baswedan, 2014). In addition, the results of teachers competency test in 2012 on 460,000 teachers show that the average value of the competency test for teachers is only 44.5 of the standard value of the expected average, which is 70 (Baswedan, 2014). There are some aspects that trigger slow quality of education in Indonesia, such as slow students' achievement, poor quality of infrastructure, poor quality of the teachers, low welfare, low educational equity opportunities, lack of education relevanciesto the needs, and the cost of education is very expensive (Setyaji, 2011). Furthermore, Utami (2015, p.473) mentions the other problems of education in Indonesia are high number of unqualified teachers, the uneven teacher distribution and over supply contract teachers.

At the beginning of the reform era, two laws has been established and became the legal basis for the implementation of education, which are: Law of the Republic of Indonesia Number 20 of 2003 about *National*

Education System, and the Law of the Republic of Indonesia Number 14 of 2005 about *Teachers and Lecturers*. The laws are intended to facilitate improved management of the National Education System. In this view, the focus of national education reform requires changes in education policies and strategies, especially related to the management and development of teachers.

Teachers' development program is implemented through the teachers' certification program. Jalal, et al. (2009, p.1) state that certification has been adopted as a requirement for both in-service teachers, and is designed to establish a quality benchmark for all teachers, including government and non-government teachers. It will provide a public guarantee of the standards of training and competency required from teachers. Meanwhile, Parkay & Stanford (2010) explain that a teaching certificate is actually a license to teach. By having a teaching certificate, it is an evidence that someone is already meet the standards of eligibility to carry out his/her duties as a teacher. This means that teachers certification is one of the efforts made by the government that teachers in all parts of Indonesia can work professionally. However, the recent teacher certification program in Indonesia to raise teachers' quality is not yet seen, although it can raise teachers' welfare (Fahmi, Maulana, & Joseph, 2011). The analysis results of Wahyudi, Supranoto & Suji research (2012) shown that they were sharp disparities in percentage of certified teacher in each school category.

Expectation of the enactment of the teacher certification program is to obtain educators who have qualified, to increase the qualifications of educators and education, to level up educational management processes of teaching and learning, and to improve the quality of human resources of the nation (Dantes, 2009). Teachers who have been certified educator is expected to increase various competencies that can deliver the performance of teachers in a real professional function. If every teacher are embedded soul and spirit to understand the certification as a means to an end, the teacher will make various efforts to improve performance, dedication, quality of work that is able to prove that the educator function is a professional function (Siswanta, 2012).

To follow the teacher certification, the teachers must have competencies. Muzenda (2013) says that competence is regarded as a multidimensional construct teaching which encompasses numerous interconnected elements towards transformation of knowledge to learners. Meanwhile, Bhargava & Pathy (2011) say that competencies are specific and demonstrable characteristics or attributes inevitable for teaching professionals to create a convincing and learner friendly environment. Teachers competencies as knowledge and skills of teachers required for effective and quality education at higher education level. These include a set of teaching skills that a teacher at the tertiary level needs to possess, in order to be an effective teacher and these are pedagogical skills, management and assessment skills, and research skills (Aziz & Akhtar, 2014).

From several statements above, it can be concluded that competence is the main component of professional standards in addition to the code of ethics as professional conduct regulations set out in the specific procedures and surveillance systems. The competencies are: pedagogical competence, personal competence, social competence and professional competence. According to Ugbel & Agim (2009), teacher is expected to possess certain competence both professional and personal. Professional competences are both academic and pedagogical. Academic competencies are the teachers' knowledge on his subject.

Pedagogical competency is the art of teaching the subject, observing such principles as teaching from known to unknown, concrete to abstract, and from simple to complex. Relation to the professional competence of teachers is the teachers' ability to master of the material and the teachers' ability in applying learning methods/approaches. Professional competency refers to substantial knowledge and skills gained following professional education or training and professionals who undertake a specific paid job or self-employment duties (Guu, Lin, & Lee, 2014). Pedagogical competence is the ability with regard to student understanding and learning that educate managers and dialogue. This is consistent with the Myrberg & Ros statement (2013) that the teacher competence is likely to be a mix of subject-specific knowledge and pedagogical skills where a crucial skill is the ability to use different teaching approaches adapted to individuals and groups.

Personal competence is the ability of a stable personality, noble, wise and authoritative and become role models for others. Social competence is the ability of teachers to communicate and interact effectively and efficiently with other people both around the school and around the environment (Jalal, et al., 2009). All of them are integrated in teachers' performance. Teachers' performance is closely related to the competence of teachers. To have a good performance, teachers should be supported with good competence. Without having good competence, the teachers will not likely be able to have a good performance. Performance is a key element in the competency test which refers to a performance or a set of tasks. According to Marsh (1996), performance is another major element in competence-testing that typically refers to the performance of a role or set of tasks. It

means teachers' performance is the result of the work that can be achieved by teachers in educational institution in accordance with the duties and responsibilities in achieving educational goals.

A good teacher should possess a wide range of qualifications, which could be schematically classified as personality traits, attitudes and beliefs and pedagogical skills and knowledge (Liakopoulou, 2011). The same idea of Joy, Hamilton, & Ekeke (2013) say that a characteristic of a competent teacher is that the teacher encourages students to reflect on social reality and empowers them to transform the existing conditions that shape their lives. Moreover, a competent teacher is one who engages student in dialogue and manages through dialogue to achieve genuine learning because when student and teachers are engaged in shared critical dialogue, they mutually create and construct knowledge instead of passively transmitting it, since they can share their experiences, reflect upon them and finally make critical evaluation regarding the way they themselves have obtained that knowledge and those experiences.

Teacher experience has a significant effect on pupil performance in primary schools and at upper secondary level. Experienced teachers have greater of experience to be able to contribute insight and ideas to the course of teaching and learning. They are open to correction and are less dictatorial in classroom (Kosgei, et al., 2013). This supports the statement of Sato et al. (2008). They state that standardsetting performance on education assessment can be used to change the practice on how to improve the quality of learning.

Khaeruniah gives a statement (2013) that a teacher's competence is the ability of a teacher to realize the planned educational aim. Performance indicators are referred to the indirect performance assessment that is seen as performance indication. Therefore the shape tends to be qualitative or can't be calculated such as increased, accuracy, velocity, level, effectiveness, and others (Moeheriono, 2012). To determine whether a teacher's performance is quite optimal or not can be seen from various indicators. With a performance assessment, it will help teachers in identifying a better job so that the teachers will run the learning process as effective as possible for students' progress and education (Barnawi & Arifin, 2012).

Schacter (2000) splits indicator of teachers' performance in three parts, which are: (1) skills, knowledge, and responsibility of the teacher; (2) students' achievement at grade level; and (3) achievement in school. Meanwhile, Usman (2006) suggests that they are three indicators of the teachers' performance. First, the ability to plan a learning program that consists of: (1) mastering the outlines of the organization of education; (2) adjusting the analysis of the subject matter; (3) collating semester program; and (4) developing a learning program. Second, the ability to carry out the teaching and learning activities, are: (1) pre-instructional stage; (2) the instructional stage; and (3) evaluation stage and its implementation. Third, the ability to evaluate: (1) normative evaluation; (2) formative evaluation; (3) report the results of the evaluation, and (4) the implementation of the improvement and enrichment programs. Ditjen PMPTK, Ministry of National Education (2008) suggests that indicators on teachers' performance assessment should be conducted on three classroom activities, which are planning, execution and assessment.

It can be concluded that teachers' performance is the result that can be achieved by teachers in carrying out the duties which they are responsible is based on skills, experience, and sincerity to work within a certain time frame. Teachers' performance did not materialize for granted, but it is influenced by certain factors, both internal factors and external factors. Factors that affect performance include mental attitude (work motivation, work ethic), educations, skills, leadership management, income levels, salaries and health, social security, labor climate, infrastructure, technology and outstanding opportunities (Asf & Mustafa, 2013).

The performance assessment helps the teachers to know their job better (Barnawi & Arifin, 2012). Thus, teachers will carry out learning as effective as possible for student progress and education. In addition, teachers' performance assessment can provide valuable input and help them to achieve the needs of teachers on professional development and career, for example through training. Assessment is not meant to criticize and find fault, but to encourage teachers to develop into a more professional that will improve the quality of students.

Teachers' performance indicators are used as a basis for assessing the quality of teachers' performance, which is developed and modified from TR Mithcell's theory in Ditjen PMPTK, Ministry of National Education (2008), that a person's performance is a combination of motivation and ability. According to Robins (Ismail, 2010), performance is a function of the ability, motivation and chance (opportunity). Therefore, it can be assumed that the motivation and ability or competence are the elements that create the teachers' performance. It is similar with Keith Davis' opinion (in Wardana, 2013) that the factors that affect performance achievement are the capability and motivation factors, motivational factors defined a leadership attitude and employees of the employment situation in the environmental organization. Thus, the teachers' performance in performing their duties may be

affected by factors of competence/ability and motivation. Teachers' performance is a combination of ability or competence plus the teachers' motivation to perform the task and teachers' motivation to develop.

In this study, the teachers' performance are generally intended as a performance in the implementation of a teaching assignment with the four indicators, which are: (1) performance on planning the lesson; (2) performance in executing the learning program; (3) performance in learning assessment, and (4) the performance in professional development.

Government efforts to improve the quality of human resources have been carried out. Not only by improving the quality of teachers, but also improving the quality of students' graduates. Learners are equipped with the competence and expertise to be ready to work so that he/she can survive for life. Currently, vocational education becomes a priority of government, to create vocational education graduates who are ready to work outside and have the skills to work. Vocational education is built and developed with the needs and situation of the workforce to meet the growing market demands (Sriadi, 2011).

National development desperately demands of skilled workers, as the quality and quantity of vocational education is increasingly enhanced. One of government's efforts is to increase the ratio of the number of vocational rather than the number of high school teachers. The target in 2009, the ratio between vocational high schools (SMK) and senior high schools (SMA) is 50:50, and in 2014 is targeted to 67:33 (Sriadi, 2011). An increase in the ratio is due to vocational high schools graduates is considered to be more prepared to work through skills that can be applied, with expectation that vocational high schools graduates can reduce growing educated unemployment in Indonesia.

The reality is not as expected, which can be seen that 8.96 million people were unemployed in 2009. Approximately, 17.26% were graduated from SMK, 14.31% were graduated from SMA, 12.59% were from university graduates, and 1.21% were from diploma graduates (Sriadi, 2011). Based on these data, vocational graduates are most widely unemployed. This is because an increasing number of vocational high schools were not balanced with the quality and quantity of teachers as a major factor in learning. In 2009, Indonesia experienced a shortage of vocational teachers, which were about 34,000 people. As a result, the quality of vocational high school graduates was decreased, while the unemployment of graduates of vocational was increased (Sriadi, 2011).

Vocational graduates must have flexible required skills that allow them to enter variety of job. However, since the industrial world also requires proficiency in language, mathematics, science, communication, and social sciences, then these lessons should be integrated into vocational skills standard (Ministry of National Education, 2002). In vocational programs, science and mathematics material are need to be included through contextual learning model and should be relevant to the skills that they learn (Ministry of National Education, 2002, p.300). Mathematics for vocational levels including adaptive subjects which aims to be a support of professional expertise and self-development skills in order to follow the growth in science and technology (Ministry of National Education, 2002).

Meanwhile, the mathematics is still a frightening subject for some students of vocational high schools. The evidence can be seen from the acquisition of scores of mathematics national exam is lower than the scores of the other test subjects. Most of mathematics teachers at vocational high schools have not been able to package the element of mathematics well, such as the context, flexibility and mathematics as a fun subject, so that vocational students' achievement can't be maximized. Research results from Shadiq (2006) identifies the difficulties encountered some mathematics teachers of vocational high schools at mathematics learning such as teachers were tough on: (1) understanding and applying the philosophy of constructivism in contextual learning; (2) encouraging students to formulate their own problems in conducting discovery (inquiry); (3) encouraging and assisting students to make connections between the knowledge that have been had by the newly learned knowledge; (4) designing issues categorized as a problem; (5) getting a reference books that are relevant; (6) familiarizing the students to express ideas; and (7) the teachers were difficult in guiding students to formulate a conjecture of existing data.

In Wonosobo regency Central Java Indonesia there are 24 vocational high schools which consist of 8 state vocational high schools and 16 private vocational high schools with a total of vocational students in Wonosobo regency around 8,500 people. The number of vocational high schools in Wonosobo is growing rapidly, almost in every district in Wonosobo has vocational high schools with a variety of majors. This led to the need of more vocational teachers. To find out information about the teachers' performance that already have a mathematics teachers of vocational high schools certified with all the difficulties and problems faced by teachers in Wonosobo, it is necessary to do a research on vocational mathematics teachers' performance. This study aimed to describe the post-certification performance of mathematics teachers of vocational high schools in Wonosobo

regency in the lesson planning, the implementation of learning, the learning assessment and in the teachers' professional development.

METHOD

This study is a descriptive research with quantitative approach. Research was conducted at several vocational high schools in Wonosobo regency. There are 8 schools that has a certified mathematics teachers educators, they are: SMKN 1 Wonosobo, SMKN 2 Wonosobo, SMKN 1 Sapuran, SMKN 1 Sukoharjo, SMK Muhammadiyah 1 Wonosobo, SMK Wiratama 45.1 Wonosobo, SMK Purnama, and SMK Gema Nusantara. The subjects in this study are all of mathematics teachers of vocational high schools in Wonosobo regency, Indonesia which have passed the certification as many as 14 people.

The instrument to collect the data consisted of teachers' self-assessment questionnaires, observation sheets, interview guide and sheets of studies document. Teacher self-assessment questionnaire was used to uncover performance of mathematics teachers of vocational high schools on planning the lesson, the learning implementation, the assessment learning and the professional development after certification. Its scale inventory questionnaire was shaped by using Likert scale model of a modified form of multiple choices. Multiple choices were consisted of 4 answer choices, where each answer has been determined score.

Observation sheets were used to determine the performance of math teachers on the learning implementation. Observation sheets were filled by researcher and independent institution when the teachers were implemented the learning in the classroom. Interview guide was used to get the information of the performance of math teachers on the learning assessment, especially in the aspects of the implementing and reporting of assessment. Sheets of document study were used to measure performance of math teachers on planning the lesson and in the professional development.

The instruments validity in this study was proved by content validity and construct validity. Proving the validity of the content can be through expert judgment and then proved by Aiken's validity (Retnawati, 2014). it was continued through obtained the proof validity of the construct using analysis factor. Reliability of self-assessment questionnaire of the mathematics teachers of vocational high schools was implemented through Alpha Cronbach. Having obtained the coefficient of reliability of the instrument, then researcher calculated the Standard Error Measurement (SEM), to understand the size of the measurement error for assessment procedures of each instrument. Estimate of reliability and SEM of instrument can be seen in Table 1.

Tabel 1. Estimate of Reliability Instrument

Instrument		Reliability	SEM
Teacher's self-assessment questionnaire	Planning the lesson	0.904	2.087
	Implementation of learning	0.891	2.062
	Assessment of learning	0.868	2.025
	Professional Development	0.809	4.621

Data analysis techniques used in this research is descriptive quantitative. The effectiveness of performance of mathematics teachers of vocational high schools was determined based on the level of propensity to perform categorization of variables. Trend level of the post-certification performance of mathematics teachers of vocational high schools was divided into 5 categories as shown in Table 2.

Table 2. Categories of The Post-Certification Performance of Mathematics teachers of Vocational High Schools

Formulas	Category
$X > \bar{X}_i + 1,8 \times sb_i$	Very Good
$+ 0,6 \times sb_i < X \leq \bar{X}_i + 1,8 \times sb_i$	Good
$- 0,6 \times sb_i < X \leq \bar{X}_i + 0,6 \times sb_i$	Fair
$- 1,8 \times sb_i < X \leq \bar{X}_i - 0,6 \times sb_i$	Poor
$X \leq \bar{X}_i - 1,8 \times sb_i$	Very Poor

Specification:

- X : score of respondents or actual score
- \bar{X}_i : a mean score of ideal
- SBi : ideal standard deviation

FINDINGS

Performance of Mathematics Teachers of Vocational High Schools on planningthe Lesson

Based on the results from self-assessment questionnaire of mathematics teachers of vocational high schools in Wonosobo regency (after certification on planning the lesson), the actual mean score is 24 (good category), the ideal mean score is 20, the ideal standard deviation is 4, the ideal maximum score is 32, and the ideal minimum score is 8. Meanwhile, the percentage of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson according to the teachers' self-assessment were 14%, which were in the very good category, 50% were in the good category, 14% were in the fair category, and 14% were in the poor category.

Based on the results of a study document, the actual mean score of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson according to the researcher was 29.43 (very good category), while according to the assessment from independent institution was 28.14 (very good category). From the results of document study,the lesson planning data obtained according to researcher and an independent institution possessed actual mean score of 28.79 (very good category), the ideal mean score 18, the ideal standard deviation 4, the ideal maximum score 30, and the ideal minimum score was 6. The percentage of post-certification performance of mathematics teachers on planning the lesson documents was also obtained. Based on the results of a study by independent researcherand institutes,it has 100%, which were in the very good category.

Thus, it can be said that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regencyon planning the lesson, was included the good category. In more detail, its percentage of performance assessment of mathematics teachers in vocational high schools at Wonosobo regency can be seen from Table 3.

Table 3. Percentage of Performance Assessment of Mathematics Teachers of Vocational High Schools based Teachers' Self-Assesment

Category	Frequency	Percentage
Very Poor	0	0%
Poor	2	14%
Fair	2	14%
Good	7	50%
Very good	3	22%
Total	14	100%

The majority of mathematics teachers of vocational high schools in Wonosobo regency were used the syllabus that have been provided by the government and they only modified the identity of syllabus and add learning resources if needed. Ratings for this syllabus were objective because the mean value is almost the same. Syllabus are slightly different interms that the syllabus were prepared by the mathematics teachers of vocational high schools based on religion. There were also syllabus that were adapted to the school curriculum that want to build the character and morals of religious students.

Likewise for lesson plan, which is possessed by a mathematics teachers of the vocational high schools in Wonosobo regency are also almost similar, because the majority of teachers used lesson plans that were compiled together in Forum of Teachers Subject. Some teachers also used lesson plan they downloaded from the internet or used the lesson plan made last year. Even so, there were some teachers who still made up the lesson plan by themselves in order to adapt to the characteristics of the students. However, there were teachers who develop the lesson plans by themselves. That teacher wanted to be able to master the learning well, more than just read and practiced. However, they designedit themselves and practice it in the classroom. Therefore,the learning in the classroom will be more effective because of his/her lesson plan have been adapted to the characteristics of the students.

The post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson is in the good category, but every teacher have to be in particular to keep practicing develop the ability to create an attractive and better learning device and adapted it to the characteristics and the needs of their students. The things that should be improved teachers on planning the lesson, especially regardedthe use of teaching methods are to involve more varied and more active role of the student.Thus, that learning is not monotonous.

Performance of Mathematics Teachers of Vocational High Schools on the learning Implementation

Based on the results from self-assessment questionnaire of vocational high schools mathematics teachers in Wonosobo regency after certification on the learning implementation, the actual mean score was 29.93 (very good category), the ideal mean score was 22.5, the ideal standard deviation was 4.5, the ideal maximum score was 36 , and the ideal minimum score was 9. Its percentage was 50% that were in the very good category, 36% were in the good category, and 14% were in the fair category.

Based on observations, the actual mean score of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation according to the researcher was 37.07 (good category), while in the assessment of an independent institution was 35.88 (good category). Therefore, the results observation the learning implementation by researcher and independent institution, the actual mean score 36.48 (good category), the ideal mean score 30, the ideal standard deviation 6,671, the ideal maximum score 50, and the ideal minimum score 10. The percentage post-certification performance mathematics teachers on the learning implementation based on the observation by researcher and independent institution as much as 21% were in the very good category, 50% were in the good category, 21% were in the fair category good and 14% were in the poor category.

It can be concluded that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation is in the good category. In more detail, the results of performance appraisal of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation based on observation by researcher and independent institution are shown in Table 4 below.

Table 4. Mathematics Teachers Performance Assessment of Vocational High Schools based Observation of The Learning Implementation

No	Aspect of the rated	Mean	Category
1	Opening the lesson	3,52	Good
2	Questioning Skills	4,85	Very Good
3	Reinforcement Skills	3,38	Fair
4	Variation Skills	4,69	Very Good
5	Explaining Skills	3,73	Good
6	Managing class Skills	4,29	Very Good
7	Guiding group discussion	2,15	Poor
8	Individual learning Skills	3,29	Fair
9	Closure Skills	3,40	Good
10	Follow up	3,15	Fair
Mean		3,65	Good

Observation sheets filled by researcher and independent institution when they were implemented the learning in the classroom revealed the fact that most of teachers still used the conventional methods to teach. Teachers did lecture and dictated the material to the students and then gave examples and exercises, so students just sat down and listened, took notes and did what they're told the teacher. The learning implementation was still dominated by the role of the teachers. The teaching methods were used have not varied although the lesson plans has been planned using varied methods. It is certainly not accord with lesson plans that had been developed by teachers beforehand. In the lesson plan, teachers plan learning by using various methods but in his/her execution, the method used mostly just a lecture. Lesson plan which has made such a mature, often not applied in the classroom. In this case the lesson plan only as a formality to complete the teacher's administration. Although the quality lesson plan that a teacher is considered very good, but the application in the classroom not maximized.

The post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation have been in good category, but teachers also need to keep improving their abilities to carry out the learning. Teachers must add insight on how to implement the effective teaching in the classroom, for example by reading books, attending seminars/workshops or following the lesson study. The things should be improved, especially teacher in implementing the learning skills of guiding group discussions and individual learning skills. Because of the guiding group discussions with individual learning can improve interpersonal relationships between teachers and students, teachers can understand the ability of pupils better and students also feel more involved on planning the lesson activities (Usman, 2006).

Teachers whose performance were not maximized on the learning implementation can learn from teachers whose performance had been better, though discussion, question and answer session, or the lesson study programs. Such way teachers can see the learning directly implemented by the teacher. Skemp (1971, P.67) says "*... the best teachers are those who are still active learners.*" A good teacher is a teacher who never stop learning.

Performance of Mathematics Teachers of Vocational High Schools on the learningAssessment

Based on the results from self-assessment questionnaire of mathematics teachers, the actual mean score was 31.29 (very good category), the ideal mean score was 22.5, the ideal standard deviation was 4.5, the ideal maximum score is 36, and the ideal minimum score was 9. Then,64% were in the very good category, and 29% were in the good category, and 7% were in the fair category.

Based on the results of a study document, the actual mean score of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning assessment according to researcher was 4 (good category), while according to the appraisal from independent institution was 4.29 (very good category). The study documents of the learning assessment by researcher and an independent institution, the actual mean score was 4.14 (good category). The result of interview get the actual mean score 4.46 (very good category). Overall,the actual mean score was 13.07 (very good category), the mean ideal score was 9, the ideal standard deviation was 2, the ideal maximum score was 15, and the ideal minimum score was 3. In percent, 64% were in the very good category, and 36 % were in the good category.

It can be concluded that that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning assessment can be categorized in the very good category. In more detail, the results of performance assessmentof mathematics teachers of vocational high schools in Wonosobo regency on the learning assessment based on the study of documents and interview are shown in Table 5 below.

Table 5. Performance Assessment of Mathematics Teachers of Vocational High Schools based Study Documents and Interview of Learning Assessment

No	Aspect of the rated	Mean	Category
1	Planning the assessment	4,14	Good
2	Executing the assessment	5	Very Good
3	Reporting the assessment	3,92	Good
Total		13,07	Very Good

On the learning assessment, the form of daily test instrument is mostly essay. Some teachers used assessment instruments that have been made years earlier or took questions from textbooks. But there were any teachers who prepared the assessment instruments by themselves. The quality of test item that made by the teachers was already good because customized with the assessment indicators. The instrument replicated the midterm or semester final test used instruments made collaboratively with other mathematics teachers when MGMP.

Teachers examine the results of the students' answer with reference to the scoring guidelines and the teachers usually give a small note in the students' worksheet. Therefore, students can learn from his mistakes and give back the students' worksheets after it is corrected. Then, the results of assessment are analyzed to do instructional improvement programs and implement remedial programs for students whose value is still lacking. Remedial teaching isan improvement on the learning process if the value of student learning outcomes is still below or not meets the *cut score* or Minimum Completeness Criteria. However, most of teachers implement remedial during the process of assessment. Remedial that is done by carrying out re-examination, could be taken once or twice until the value of the students are able to reach the cut score or teacher can give assignments.

The post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning assessment is in the very good category. However, every teachers in particular must practice to develop the ability, in order to make better assessment instruments. The things that should be improved in the assessment of teachers are in the aspects of planning a study that assessment, especially in the preparation of assessment instruments. It is because the validity of the information the learning assessment are depends on the care that goes into the planning and preparation of tests and assessment (Miller, Linn, & Grounlund, 2009).

Performance of Mathematics Teachers of Vocational High Schools in the Professional Development

Based on the results from self-assessment questionnaire of mathematics teachers of vocational high schools in Wonosobo regency after certification in the professional development, the actual mean score was 12.57 (very poor category), the mean ideal score was 32.5, the ideal standard deviation was 10.83, the ideal maximum score

was 65, and the ideal minimum score 0. The percentage were 50% were in the poor category, 50% were in very poor category.

In general, the study documents about the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in the professional development, showed the actual mean score was 14.14 (very poor category), the ideal mean score was 15, the ideal standard deviation was 2, the ideal maximum score was 15, the ideal minimum score was 3. The percentage of the post-certification performance of mathematics teachers in professional development based on the study document were 100%, that can be categorized in the very poor category. Thus, it can be said that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in professional development were very poor and needs to be improved.

Most of the teachers, who have been certified to be senior teachers at the school and if attendance or invitation for training is needed in schools, will be given to the young teachers. Therefore, the opportunity of develop the profession for teachers who have passed the certification are very limited. In addition, a minimum teaching time of 24 hours can make teachers unable or very difficult to develop. And it coupled with the teachers' administrative that was very much. Most of teachers complain about it, because the teachers did not have time to just read the book and add insight about the latest learning strategies.

In more detail, the results of performance assessment of mathematics teachers of vocational high schools in Wonosobo regency after certification in professional development is based on the study of documents are shown in Table 6.

Table 6. Results of Performance Assessment of Mathematics Teachers of Vocational High Schools based Study Documents of Professional Development

No	Aspect of the rated	Mean	Category
1	Participation in the relevant courses with the teaching competences	1	Very Poor
2	Participation in the upgrading and workshop/teacher training	3,36	Fair
3	Participation in the work or joint activities	1	Very Poor
4	Participation in the scientific activities	1	Very Poor
5	Presentation in a scientific forum as a speaker	1	Very Poor
6	Do scientific publication of research results and ideas in the education formal	1	Very Poor
7	Create article/popular scientific in education	1	Very Poor
8	Create a learning dictate	1	Very Poor
9	Create a modules	1	Very Poor
10	Do class action research	1	Very Poor
11	Create appropriate technology for mathematics subject	1	Very Poor
12	Create/modifications matematics props	1	Very Poor
13	Participation in the development of standard setting, lattice or test guideline	1	Very Poor
Total		1,18	Very Poor

Mathematics teachers of vocational high schools in Wonosobo regency, especially those who have passed this certification are mostly women. Besides their profession as a teachers, they also act as a housewife who has a lot of activity in the house. Therefore, the mathematics teachers of vocational high schools in Wonosobo regency is not so keen to develop the profession and promotion. Thus, the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency still is in poor category. No mathematics teachers of vocational high schools in Wonosobo regency wrote popular scientific articles in education, textbooks, modules, appropriate technology for mathematic, as well as modifying the mathematical props. Also, there were no one ever done a scientific publication of research results or ideas knowledge in the formal education.

Discussion

Based on the description of the results of research obtained information that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson based on self-

assessment is in the good category, where half (50%) of the number of teachers who have been certified were in the good category, and 21% were in the very good category, while 29% were in the fair category and poor category. From the results of study documents, all teachers (100%) showed very good category about the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency. Such result because the teachers have been complete had a learning device.

Overall, mathematics teachers of vocational high schools in Wonosobo regency after certification have good performance on planning the lesson aspects. This was confirmed by the results of Khodijah's research (2013, p.95) on the post-certification performance of Religion teachers in the province of South Sumatra which revealed that the performance of teachers on planning the lesson was in the good category. The results of Palupi's research (2011) about the post-certification performance of Science teachers in the city of Yogyakarta also revealed that the performance of teachers on planning the lesson was in the good category. Slightly different from the results of Kartowagiran's research (2011) which states that the post-certification performance of teachers in Sleman regency in aspect of created the lesson plan at least is still maintained with quality of lesson plan is excellent category.

In terms of the learning implementation based on self-assessment, mathematics teachers' performance after certification showed the good category, which half (50%) of the number of teachers who are already certified his/her performance on the learning implementation is also has very good category. Meanwhile, 36% of teachers have the good category, while 14% more teachers were the fair category. From the observation, it is showed that the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation is also in the good category. Meanwhile, 21% the number of teachers who have passed the certification of teachers were in the very good category, and 50% of teachers or the others were in the fair category.

Overall, mathematics teachers of vocational high schools in Wonosobo regency after certification have good performance on the learning implementation aspect. This was confirmed by the results of Khodijah's research (2013) on the post-certification performance of religion teachers in the province of South Sumatra which revealed that the performance of teachers on the learning implementation is in the good category. The results of Palupi's research (2011) about the post-certification performance of Science teachers is in the city of Yogyakarta also revealed that the performance of teachers on the learning implementation in the good category. It is slightly different from the results of Kartowagiran's research (2011) which states that the post-certification performance of teachers in Sleman regency in the implementation aspect of learning undertaken by teachers is in excellent category.

Performance of mathematics teachers of vocational high schools in Wonosobo regency after certification on the learning assessment based on self-assessment is in the good category, where more than half (64%) of the number of teachers who certified, were in the very good category. Meanwhile, 29% were in the good category and 7% others is in the fair category. Then, the results of observational studies and documents regarding the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in learning assessment also shows very good category, where more than half (64%) of the number of teachers who have been certified performance is in the very good category, and 34% teachers' performance is in the good category.

Overall, mathematics teachers of vocational high schools in Wonosobo regency after certification have good performance on the learning assessment aspect. This was confirmed by the results of Palupi's research (2011) on the post-certification performance of Science teachers in the city of Yogyakarta revealed that the performance of teachers on the learning assessment was in the very good category. It is slightly different from the results of Khodijah's research (2011) which states that the post-certification performance of religion teachers in the province of South Sumatra which revealed that the performance of teachers on the learning assessment in the fair good category

Performance of mathematics teachers of vocational high schools in Wonosobo regency after certification in professional development based on self-assessment showed is still not good, in which half (50%) of the number of teachers who are already certified, the performance mathematics teachers in professional development is in the poor category and half more (50%) is in the very poor category. Meanwhile, the results study show that the performance of all documents (100%) mathematics teachers of vocational high schools in Wonosobo regency after certification in professional development is still weak and need to be improved again.

Overall, mathematics teachers of vocational high schools in Wonosobo regency after certification have very poor performance in the professional development aspect. This was reinforced by the results of Khodijah's research

(2013), which examines the post-certification performance of teachers in the province of South Sumatra in professional development, which was still need some improvement. The result of Wibowo & Jailani's research (2014) also indicate that the mathematics teachers of junior high schools in Wonosobo regency are still has some difficulties in developing their teaching , especially in terms of scientific publications and innovative work. Teachers are also obliged to continuously improve and maintain the professionalism competence as a professional teacher. Therefore, the teacher must develop its professionalism to be more stable and more professional.

Overall profile of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in the planning, implementing, and the learning assessment and in the professional development are shown below.

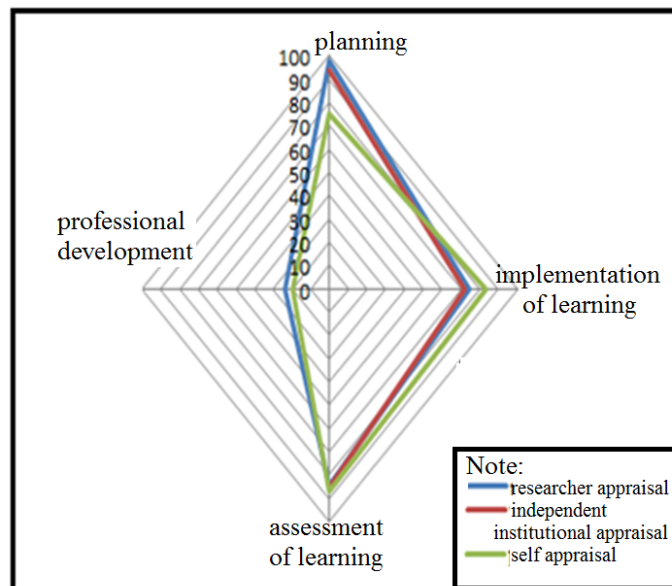


Figure 1. Assessment of the post-certification performance of vocational high schools mathematics teachers in Wonosobo regency on Planning, Implementation, and Assessment of Learning and Professional Development

Mean score of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson and on the learning assessment are in the very good category, while the mean score of the post-certification performance of their learning implementation is in the good category. Whereas, mean score of the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in professional development is in the very poor category.

CONCLUSIONS AND SUGGESTION

Conclusions

Based on the analysis of data and discussion, four conclusions can be made, which are: (1) the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on planning the lesson is in the good category; (2) the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency on the learning implementation is in the good category; (3) the post-certification performance of mathematics teachers of vocational high schools in Wonosobo, on the learning assessment is in the very good category, and; (4) the post-certification performance of mathematics teachers of vocational high schools in Wonosobo regency in the professional development is in the very poor category and needs to be improved.

Suggestion

Based on the discussion and conclusions of research then offered five suggestions, which are; (1) the principal shall schedule a post supervising teacher certification periodically and communicate the results to the teacher supervision. Therefore, teachers can maintain professionalism and improve his/her shortcomings. The principal should also provide the opportunity for teachers to continuously improve and develop their work. For example, teachers are given the opportunity and included in a teachers training, seminar, and scientific work competition, as well; (2) the schools should be frequently held IT training because many teachers who have passed the certification have not been adept at using IT tools. It limits them in accessing information; (3) the relevant institution, in this case, the *Dikpora* Wonosobo should not be selective in providing opportunities for teachers to

participate in self-development training; (4) universities as educator producers, should add organized coaching programs and equip students with the writing and researching ability, and; (5) for mathematics teachers of vocational high schools, it is expected to always improve his/her ability into classroom action research, the preparation of the learning, mastery learning methods and theory, and the manufacture of paper or scientific work.

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UNIVERSITY LECTURERS EXPERIENCE IN THE DESIGN AND USE OF MOODLE AND BLENDED LEARNING ENVIRONMENTS

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Abstract : This study is designed to investigate into how academics (university lecturers) who were involved in the design and development of MOODLE based-courses use the blended learning system to facilitate teaching and learning in the classroom and what factors facilitate or impede the effective design of MOODLE by academics .Qualitative research design was used. Various existing courses of seven lecturers at various faculties of University of Education, Winneba were redesigned with the lecturers and instructional designers in accordance with the specifications of MOODLE learning environment. The lecturers implemented the designed MOODLE learning environment with face-to-teaching to teach students in the real classrooms of the University. The results of the study revealed that academics use MOODLE to prepare and present lessons and chart with students before and after face-to-face lesson in the classroom. The results also revealed that the way academics use MOODLE for assessment reflects their mode of face-face teaching in the classroom. In addition, the finding showed that training program, incentives and motivational packages are necessary for academics to adopt ICT. The major challenges faced as revealed by the results were: 1) low technology competencies, cumbersome institutional culture, and lack of adequate ICT facilities. It is concluded based on the findings that Blended learning systems seems effective and efficient in developing countries (Ghanaian context). However, its development and implementation by the users (academics) present a number of challenges that need to be addressed in order to achieve its full potentials to promote the development of the 21st century competencies

Keywords: Educational technology, Instructional design, Blended learning, MOODLE learning environment; Academics; University teachers; Blended learning; Face-to-face teaching

INTRODUCTION

The effective integration of information and communication technology (ICT) in conventional universities (in developing countries) towards an increased number of students coupled with inadequate resources is one of the issues confronting educational systems in the 21st century. E-learning is widely used in universities and other educational institutions all over the world towards the solution of massification on higher education and also to promote the development of the 21st century competencies in students. More especially, with advancement of the internet, large number of institutions is working on creating better web based tools such as learning management systems for e-learning to facilitate quality teaching and learning of large number of students in higher education institutions (Holbl & Welzes, 2010). As indicated by Dalsgaard (2006, p. 1) 'Whether focusing on distance education or campus based education, universities all over the world are using learning management systems to support and improve learning within their institution.' Research on successful integration of web-based learning is lacking in the Ghanaian context, as pedagogical integration of ICTs is not yet widespread among Higher Education institutions in the country. The few studies that have been done (e.g. Ludewig, 2011) document the processes and development of open educational resources for delivery of a number of medical programmes. There is therefore the need for development and a systematic evaluation of innovative low cost LMSs with face-to-face (F2F) teaching system that fit the context of higher institutions in Ghana as a developing country. It was in this light that the

Partnership for Higher Education in Africa Educational Technology Initiative (PHEA ETI), coordinated by the South African Institute for Distance Education (SAIDE) supported a number of African Universities, including the University of Education, Winneba (UEW), Ghana to develop the capacity to initiate and sustain effective educational technology projects which impact on the nature and quality of student learning experience and outcomes. The Initiative also supported knowledge creation and dissemination across and between partner universities on the use of educational technology. The PHEA ETI supported three interventions at UEW: i) a baseline study on the status of Educational Technology (ET) at UEW, ii) the development and deployment of MOODLE Learning Management System (F2F instruction), and iii) an investigation into how academics and students use MOODLE with F2F instruction for learning over a period of four years. This research study is focused on the third interventions of the PHEA ETI project. The investigation focused on the evaluation of user (lecturers) experience in the designing and use of blended (MOODLE with face-to-face) learning environments for teaching and learning.

Learning Management Systems and MOODLE

The advancement of research on how people learn and the evolution of information and communication technologies (ICT), more especially after the introduction of internet, have introduced new and important conceptions and strategies of teaching and learning. Learning management system (LMS) is one of the recent teaching and learning strategies in instructional technology promoted by internet. A learning management system is a software application for the administration, documentation, tracking, reporting and delivery of electronic instructional technology courses or training programmes. Learning management systems range from systems for managing training and educational records to software for distributing online blended/hybrid courses over the internet with features for online collaboration. Universities, colleges, schools and training institutions use learning management systems to deliver online courses and augment on-campus courses (Wikipedia, retrieved 8 January 2016). The history of LMS could be traced to a term “integrated learning systems” which offers additional functionalities, such as management and tracking, more personalized instruction, integration across the system, beyond instructional content. The adoption of LMSs for web-based instruction continues to increase in today’s higher education institutions (Vovides, Sanchez-Alonso, Mitropoulou, & Nickmans, 2007; Ullman & Rabinowitz, 2004). There are free learning management system (e.g., MOODLE, opened, open Emis), and commercial learning management system (e.g., Blackboard, WebCT).

MOODLE learning environment

Modular Object-Oriented Dynamic Learning Environments (MOODLE) is a type of free learning management system or a free software e-learning platform. It is also known as Virtual learning environment. MOODLE is an open source course management system originally developed by Martin Dougiamas at Curtin University in Australia. MOODLE as a learning management system is written in PHP and distributed under the GNU General Public Licence. MOODLE was purposely developed to help educators to create online courses with a focus on interaction and collaborative construction of content, and is in continual evolution. It provides all the necessary tools for educators to create a virtual classroom via the internet. MOODLE features include a list of participants (teacher and students), calendar with course schedules, a list of assignments, online quizzes, forums (where students can post comments and ask questions), glossaries of terms, and links to other web resources. With the customizable management features, MOODLE is used to create private websites with online courses for educators and trainers to achieve learning goals. It is used by most of educational and training institutions around the world (more especially in the advanced countries) to provide an organized interface for e-learning, or learning over the internet. It is for blended learning, distance teaching, flipped classroom, and other e-learning project in schools, universities, workplaces, and other sectors.

MOODLE development by Dogiamas (1998) is grounded by social constructionism (Papert & Harel, 1991) pedagogy which is essentially that learners learn best by communicating with one another and creating their understanding through words, pictures or artifacts in a collaborative environment. It is emphasized that culture plays a large role in the cognitive development because learners construct understanding of experience together, not alone. On the other hand, the pedagogical functions of MOODLE learning environments are also governed by social constructivist or social cognitive learning framework by Vygotski. According to social cognitive approach, learning is considered as cognitive and social activities (Vygotski, 1978; Brown, Collins & Duguid, 1989). Thus learners construct knowledge (learning experiences) based on their own mental and social activities. Ormrod (2004) argues that knowledge construction may occur as an independent activity of the individual or when individuals work together. Social constructionism is focused on the artifacts that are created or constructed through the social interaction of a group, while social constructivism is focused on an individual’s learning (construction of knowledge and skills) that takes place because of their interactions in a group. It is argued that social constructionist and social

constructivist pedagogical functions in MOODLE learning environments are closely related in the sense that learners work together to construct an integrated set of knowledge, attitudes, and skills individually (in the mind) to enable them solve (real life) problems and also create artifacts that are observable to reduce human discomfort.

MOODLE learning environment, if well designed has the potential to provide technological learning tools, which are also referred to as individual personal tools and collaborative personal tools (Dalsgaard, 2006). The pedagogical potential of these kinds of personal tools such as, weblogs, wikis, web pages, e-portfolios are to support students independent work process. And the pedagogical potentials of the personal collaborative tools, such as discussion forums, chats, links, e-mails, file sharing, wiki is to support interactions between learners and teachers, among learners, and between learners and content. The educational potential of the MOODLE depends very much on the utilization of the technological tools in line with specific learning activities based on social constructivist and social constructionist learning principles.

Naddabi (2007) reports that effective integration of MOODLE in teaching and learning process (by making use of the features such as forum, resources links of dictionaries and newspapers, quiz, and journal in teaching) has the following advantages: 1) enhancing students-student interactions and teacher students interactions, 2) finding a real audience to interact with; 3) helping students to do their research for their independent study project; 4) fostering students' independence; and 5) a change of routine. These advantages would commonly be found in any course management system, but it is still basic usefulness of MOODLE. To support its effectiveness, the results of a study conducted by Ahmad and Al-Khanjari (2011) showed that students who were introduced to online learning environment through MOODLE, had encouraging, optimistic, and positive approaches and attitudes towards MOODLE. Their learning was improved and their understanding of the course material was better. In addition, Hinkelman and Grose (2005) report the results of a pilot listening/reading comprehension placement test at Sapporo Gakuen University. They concluded that with sufficient hardware resources, MOODLE was successful in providing a practical technical platform for administering placement tests to large number of students in a short time with time savings in the making and analysis of test results. Furthermore, Stanley (2007) focuses on vocabulary acquisition in an intensive reading course at Kanda University of International Studies while using MOODLE. The results showed that MOODLE and its glossary module in particular have been of immense help to teachers while offering students opportunities to learn vocabulary well beyond the classroom even with limited class hours of learning. The finding of the study done by Zoran and Rozman (2010) indicates that the learner type, that is whether a full-time or a part-time student, has no influence on students' perceived usefulness of MOODLE learning environment. Goyal & Tambe, (2015) report that an elementary working knowledge of computers will enable teachers and students to use MOODLE system well. It is argued that there are consistent research findings in the literature to support the effectiveness, efficiency and ease of use of MOODLE learning environment to facilitate students learning processes.

Horton (2000) states that LMS/MOODLE can be used in one of three scenarios namely: i) in a completely online environment without face-to-face interaction; ii) in a hybrid course environment where the class frequently meets face-to-face, as well as conduct online meetings and activities; and finally iii) in a face-to-face course environment with the provision of web-based support materials and activities.

Face-to-face teaching is a traditional mode of teaching or a lecture whereby the students, teachers or facilitators meet together in the same classroom or place at the same time with the purpose of helping the students to achieve the learning goal. The traditional F2F teaching enables students to: 1) work with the new information presented; 2) interact with the teacher and the peers in the classroom; 3) question on the concepts they don't understand, 4) get immediate feedback from the teacher on their questions; and 5) observe the gestures and facial expressions of the teacher. The basic disadvantage of the F2F instruction is that it is inappropriate to foster constructionist and constructivist pedagogical principles effectively, more especially when the class size is large, to promote the development of 21st century competencies. A combination of face-to-face and online instruction is termed as blended learning (BL). Historically, blended learning is a combination of traditional face-to-face learning systems and distributed learning systems. It is learning systems that combine F2F instruction with computer-mediated instruction (Graham, 2004). More recently, blended learning is described as a combination of face-to-face and online instruction that varies based upon the needs of the learners (Florian & Zimmerman, 2015). According to Florian and Zimmerman (2015), as technology and delivery systems for blended learning have advanced, MOODLE has become the virtual platform of choice for education. In a study conducted by Ahmad and Al-khanjari (2011), most students preferred a F2F approach, supported with online material and activities (such as e-mails, chats etc) as a favourable mode of learning. Florian (2010) has extensively discussed a varieties of virtual platforms for schools with respect to

learning management systems and concluded that MOODLE is the best possible for institutions because of its constructivist learning design, cost effectiveness, ability to expand with the student population; data analysis capabilities; and ability to meet the diverse needs of institutions, instructors, and learners. As the schools continued to develop BL courses, MOODLE is considered as the optimal tool. The basic goal of the blended learning activity in this respect is to combine the advantages of F2F teaching and that of online learning (MOODLE learning environment). In a well-constructed BL course, the time in class either can lead the online requirements or it can follow, but the two parts need to be connected and depended upon each other to ensure a successful BL environment (Graham & Allen 2008). Research (e.g., Hsu, 2011) has shown that F2F learning group with e-learning (MOODLE) bridges the gap between students and instructors. Blended learning environments facilitate the acquisition of skills required by learners to enter the global work force: communication skills; collaborative skills; critical thinking skills; and ability to connect one learning opportunity to another (Florian & Zimmerman, 2015)

The context of the study

The University of Education, Winneba is a multi-campus teacher education institution in Ghana. The student population currently is 50,012, consisting of 23,746 distance education learners, 8,636 sandwich/part-time students, and 17, 630 regular on-campus students. University of Education, Winneba, in Ghana like other African (developing) countries has experienced serious escalation in the demand for higher education in the face of inadequate financial resources. Various classrooms in the university are not equipped technologically to facilitate the teaching of large class. Therefore, lecturers find it difficult to teach in accordance with constructionist and constructivist learning principles to promote the development of knowledge and skills required by learners.

The University of Education, Winneba (UEW) adopted the blended model (MOODLE with F2F classroom teaching) because i) the issue of large class sizes is a big problem that creates less lecturer-student interaction; ii) most of the academics have inadequate capacity and time for effective facilitation of full online courses; iii) the ICT infrastructures/facilities, particularly Internet connectivity, are not yet developed significantly to support exclusive online course delivery; iv) MOODLE is a free learning software platform and does not put any financial burden on the University; v) it is easy to use by academics who are not adequately competent in the use of computer; and vi) it is simple to learn and adopt.

As indicated, the blended instruction encourages different learning styles of large number of students and maintains quality lecturer–student interaction in the classroom at the same time. When instructors replace in-class time with online components such as uploading reading materials for students to download prior to class, discussion forums, quiz etc., the significant amount of the course learning activities has been moved online. This therefore, frees up time for the lecturer to address students’ learning problems or areas that students may find particularly confusing

However, some common problems among less computer literate teachers and students(even in Japan as more advanced country) in the use of MOODLE or BL are: 1) logging a large number of students for the first time is a difficult task; 2) lack of computer literacies of both some teachers and many students who used Moodle inefficiently; 3) jamming students’ email accounts with unwanted messages when they used sharing forum. To solve these problems, research findings by Moloney and Guterrez (2006) showed that there is the need to offer more basic and intermediate MOODLE training session as a part of faculty development (FD) activities for instructors who intend to use web based learning environment but who lack the fundamental knowledge and skills to use MOODLE before each semester in order to utilize it efficiently as well as systematically.

Moreover, the results of research study conducted by Morgan (2003) show that the use of an LMS is increasing at a rapid rate. It is however remarkable that the use is not focused on the interactive features of the LMS (MOODLE and blackboard) but on the content creation tools. The results also indicated that although instructors claimed that they had adopted the LMSs in order to meet pedagogical needs of students, it seemed that the actual use of the system was meeting class management needs. It is worth noting that even though the World Wide Web contains vast information and resources, the inefficient use of these resources can limit many instructors who may not know how to harness the strengths of these information forms and resources (Jungwirth & Bruce, 2002). What this means is that courses modeled to be delivered online should include a lesson on effective use of the technological tools of the web and appropriate learning and instructional principles to enable learners to use web-based platforms effectively and optimally.

Again, Greyling, Kara, Makka and Van Niekerk's (2008) observed that for instructors to have the relevant skills to be able to utilize LMS tools effectively and to incorporate relevant pedagogical practices in their courses they need to have indepth training and access to technical support and assistance. It is crucial that instructors are trained and supported to acquire the 'new' pedagogical role and the implementation advantages they can offer to educational technology. When pedagogical approaches to teaching are consistent with the technology, the efforts to use the technology are more likely to yield positive results. Topper (2005: 304) believes that "for teachers to use technology in support of their teaching, and to see it as a pedagogically useful tool, they must be confident and competent with the technology they are planning to use". As a consequence, it is essential that instructors have in mind both technology and pedagogy when designing their course content and assignments for MOODLE LMS delivery. The above research findings indicate that training and support is absolutely essential if instructors are expected to develop and implement blended learning system (MOODLE with F2F learning environment) as powerful learning tools (Nelson, 2003 cited in Vovides et al, 2007). The present study has thus considered carefully the training of academics (lecturers) in: 1) the pedagogical principles in the design of MOODLE; 2) online course (MOODLE) design and development; and 3) how to effectively use MOODLE with F2F teaching and learning as a critical components.

Aims and objective

The study is designed to investigate if blended learning environment can contribute to the solution of instructional and learning problems in UEW, Ghana. More specifically, it is intended to ascertain how academics who are involved in the training and design of MOODLE learning environments use the blended learning environments to facilitate teaching and learning; and the factors that facilitate or impede the design and use of MOODLE and the BL by academics for effective teaching and learning

The educational significance of this study lies in the fact that its findings will inform Educational Technology policy (makers and researchers) and technology professional development programme in (higher institutions) UEW about the best practices and challenges associated with MOODLE and BL. It will add new insight from the Ghanaian perspective to the literature on successful implementation and support of MOODLE and BL in learning environment with limited ICT resources to facilitate the development of 21st century competencies in students..

RESEARCH DESIGN

A general qualitative approach was used because this methodology helped the researchers to gather in-depth understanding of the situation and analyzing the situation data in order to frame issues and formulate emerging themes (Owen & Demb, 2004).

The participants

Two ICT lecturers and five non- ICT lecturers, from UEW, were the main participants in this qualitative study. Furthermore, as already been indicated, this study was a part of PHEA-ETI. As part of the overall planning stage of the Initiative, four researchers, six research assistants, three multimedia specialists and four MOODLE technicians were appointed to assist in the MOODLE management and online course development. SAIDE provided external MOODLE courseware workshop facilitators who were assisted by two UEW instructional designers and technologists. The research works were also subjected to both internal and external peer reviews to ensure that expected standards were met.

MOODLE learning management system and face-to-face interaction

To achieve the purpose of the study, seven courses (undergraduate and post-graduate) of seven lecturers from the various faculties of the university were selected. Content and the structure of the courses as tailored on the MOODLE learning environments were revised and redesigned with the lecturers and other participants (instructional designers and multimedia specialists) in accordance with the design standards provided by the SAID. As already has been indicated in the introduction, the intervention 2 of the entire project focused on the training of the participants and the development and deployment of MOODLE learning environments .A system of instructional delivery using MOODLE learning environment was adopted to supplement F2F lectures and practical classes. In this context, MOODLE was used to extend students' access to learning resources and activities online, enhance student-student, student-lecturer and student-content interactions using MOODLE personal and collaborative tools and to enrich activities and resources to support classroom interactions and assessment. The modules used by instructors included resources, assignments, chats, quizzes, forums, wiki's, surveys, glossaries, journals and choices. The expected activities under each feature as outlined in the MOODLE user manual was matched against actual activities carried

out on MOODLE during the implementation period. The closer these two sets of activities were the more optimal the use of these features and vice versa (visit: moodle@uew.edu.gh) The quality of MOODLE courses was evaluated using a course structure and learning pathway rubric as well as quality assurance checklist provided by SAIDE. Students accessed the environment using their UEW official user accounts (password protected). They accessed the MOODLE for the entire semester, MOODLE was set up and configured at the Network Operations Center (NOC) on a dedicated server procured with funds from the PHEA ETI.

Data Collection instruments and analysis

In order to answer the main research questions, the reflective journals of academics (RJA) on all processes that were carried out towards the implementation of MOODLE were examined. In addition, MOODLE user logs (MUL) for each of the courses were used by the researchers to provide evidence about how academics used the MOODLE platform for teaching and learning. More importantly, focus groups interview/discussion with selected lecturers who participated in implementation offered the researchers an opportunity to obtain qualitative data from their peer academics. Also, evaluation reports of Advocacy and MOODLE courseware development workshops (AMCWDW) provided useful data on how the MOODLE courses were developed by participating academics. The research data were analysed qualitatively according to the themes around the research questions and study constructs. Reliability and validity were achieved by triangulation of data collection methods: interview, observation and document review, and analysis (Patton, 1990, cited in Owen & Demb, 2004).

RESEARCH FINDINGS

To answer research question one (1), the central issues were focused on the following sub-questions: a) what kind of teaching activities were carried out by the academics when using MOODLE and F2F learning environments?; b) were the assignments and quizzes appropriate and aligned with instructional objectives?; and c) what were the perceptions/impressions of the academics about their use of BL systems?

The results of the investigation indicated that lecturers used MOODLE to prepare and present the course materials to students before face-to-face teaching. Interaction with lecturers (Peter Akayure) during focus group interview confirmed this:

Well I will say I used MOODLE to prepare my course material. Before MOODLE you had everything on you or you had to let the students photocopy some section of a book or something. But now I can extract the parts that I think are important to the course I will lecture, then I put it [lecture notes] there [on MOODLE] so before I come [to class] I expect the students to have read in advance.

Another academic from the Department of Mathematics Education corroborated Peters' view as follows:

I think that mostly we used [MOODLE] to also present PowerPoint. Now we upload them for the students to have a look at it before we come to class..... We also inculcated [incorporated] some class activities on the MOODLE so that they would participate in those activities.

From the user logs and classroom observation, it was observed that during the first lesson the instructors demonstrated to students how the MOODLE platform would be used together with the face-to-face teaching and how the students should log-in and update their user profiles. The use of the chat module by instructors was corroborated by statements of a lecturer during a focus group interview:

At the beginning of the class we used it [MOODLE] to chat with each other and I told them I would be online to chat with them

Observations from the user logs and Yidana's journal of activities confirmed this point.

It was observed that lecturers put up questions and statements in the discussion forum and students posted their thoughts or opinions and also commented on the postings or thoughts of their other classmates. Lecturers then commented on the replies of the students. Comments by lecturers during a focus group interview buttress this point:

I used the forum a lot. Because we would come to a stage in class [during] the face-to-face discussion where they would have to give their views.....

We did forums too where the students were able to comment on other students input.

I used the forums to talk about issues that I really want to pick their minds on during face-to-face.

The following comments of some lecturers corroborate this point:

I used journals to get their [students] feedback of what they have studied.....

Furthermore, during the focus group interview, a lecturer passed the following comment in support of the use of e-mails:

Some students too had problems with registration and we taught them how to use e-mail to send message so they used to send e-mail messages to us, requesting for help from us.

It was further observed that for the postgraduate courses, assignments and forum discussions were the dominant instruments used for assessment. Projects and laboratory practical works were the preference for Yidana, and this reflected in his mode of teaching (project and problem based teaching). Again, it was observed that some academics (Williams) used MOODLE to deliver quizzes and end of semester exams consisting of multiple choice types, short answers, and matching types which provided instant feedback. This also reflected the pedagogical practices – predominantly lecture approach – [of Williams]. It was observed that the discussion forum and journal assessment provided feedback but not immediately. Some of the comments from the academics during focus group interview confirmed the above:

I used quizzes as well, and then because it is a programming based course we have to do some practical work. That one they do it...

The following comments of some academics support this point:

I used journal for assessment or assessing the students.

With regards to the perception of academics about the use of MOODLE, the investigation revealed the following during the focus group interview:

For me I would say [MOODLE training and use] affected me positively because it is putting you the lecturer on your toes to provide good quality resources and material. Because students now have access to the internet, if you also do not research to put up to date information and resources online for them on MOODLE you will find yourself wanting during face-to-face teaching.

This comment also implies that teaching online places more load on instructors, at least for first time adopters and compels them to prepare well.

To answer the research question two (2), the central issues were focused on what actually helped and motivated the academics, which were not existed in normal learning environments, throughout the process of developing their own courses online and use it effectively in the classroom; and factors that impeded or slow down the process of developing and using MOODLE in classroom teaching and learning.

The results of evaluation of the External Facilitator's Courseware Development Workshop indicated that the workshop helped academics to acquire knowledge and develop skills in designing not only courseware but also utilize MOODLE in teaching and learning. One of the gains of the workshop as observed by the researchers was that academics' interest and enthusiasm were increased. However, the results indicated that academics would prefer hands-on practical activities and one-on-one mentoring during such workshops as observed by one of the participants' comments:

Meet course designers where they are and begin the assistance from that angle. I think this approach will do us much good since we have varied individual challenges though doing the same thing.

Overall, participants felt that the workshop was useful and helpful to them in their course development process. It also enhanced their understanding of the various modules of MOODLE as indicated in some of their comments:

Very interactive and learner-centered, some of the challenges I faced were addressed with examples and one to one instruction;

The activities helped to empower me: workshop met my maximum expectation; about 75% of my expectations were met.

The aspect of the workshop that participants found most useful included wiki and forums, chat rooms, journals, the one-on-one nature of assistance from resource persons, the chunking and overall planning of the course following Gagne's principles of instruction.

The investigation revealed that when lecturers were assured of monetary rewards and promised promotion using online courses their motivation to participate in the workshops also increased. Even though these promises were made to academics, some of the comments from academics point to the fact that they were not convinced about the university's ability to fulfil its promises:

I think incentives must be given for lecturers who make the effort to [develop and] upload their courses online. Because it is not that easy;

It [creating online courseware] is time consuming and it's even more than one research paper;

Yeah, there should be some motivation in that aspect;

*It [online courseware] is more than one research paper, an article;
So maybe we should be promoted or it [online courseware] should be granted as part of the promotion requirements;*

Others suggested the use of online platform to deliver future workshops as this will save time of participants who are already overloaded with other University tasks as pointed out by a participant:

*[I have]enjoyed it [workshop]. I'm wondering if it wouldn't make more sense in trying to do a workshop on-line rather than face-to-face. I like this approach better, but we should get used to being more efficient with our resources. A reality is that with more and more technology, we don't get more efficient..
This kind of workshop [should] be organised when school was not in session.*

On the courseware evaluation criteria that participants spent considerable time developing, some participants were of the view that it was premature to undertake that activity and would rather wait till the courses were considerably developed. A comment of a participant buttresses this:

The evaluation criteria stuff might be more appropriate later. I think it's better to focus on trying to get our courses up and running... Too much of the criteria focuses on the surface stuff - it's easy to get caught up in the layout/format issues and miss the deeper purpose of using the MOODLE (Source: external facilitators report).

Even though academics were able to develop online courses, some of them only used a limited number of the tools and features contained in the MOODLES LMS. The evaluation results of External Facilitator's Follow-up Workshop depicted that:

More than half of the respondents representing 55% highlighted they wanted technical and administrative assistance regarding the intermittent network breaks; 30% faced initial problems uploading pictures, books, designing questions and differentiating colours of activities from presentations.

Furthermore, participants evaluation report showed that: *some participants still had problems uploading graphics, using wikis and entering math symbols and expressions.* Other participants indicated that: *they still had difficulty creating multiple choice quizzes on MOODLE, while others had problems in chunking and creating content with graphics and animations.* Other challenges that were faced were: *unstable internet connectivity, frequent light off, inadequate computing facilities for academics and students, etc.* This includes *inadequate technical assistance* as it was observed by the researchers. The evaluation report of the first External Facilitator's workshop supported this:

However, the major challenge which was faced was the unstable nature of internet connectivity

It was also observed that the Project Management Team faced certain administrative challenges from the cumbersome administrative procedures and procurement laws of Ghana that delayed the acquisition of equipment and software. In addition, during the planning stage, the programme management team initially had difficulty in getting all team to meet regularly as a result of other institutional assignments.

During the focus group interview some of the academics also reported that:

some students complained that they had no reliable access to computer laboratories after classes and those who have computers to access the LMS they had challenges with the internet connectivity.

DISCUSSION OF MAJOR FINDINGS

How academics use MOODLE for teaching and learning

Clearly, the results of the study indicated that academics used MOODLE to chart with students before they have the face-to-face lesson in the classroom. They also used MOODLE to prepare and present their lesson, by using Powerpoint presentations. This implies that academics perceive MOODLE as a platform that assist them to develop the online components of their courses and extend learning resources to students outside of the F2F classroom settings, and use it as such. In addition, academics perceive and use MOODLE as a learning platform that encourages social interaction and collaboration among learners. Collaboration was achieved through hands-on online interactions, using Wikis, discussion forums, and chats. This finding is in line with Dukes et al. (2006) and Florian (2010) studies that blended instruction encourages different learning styles and maintains quality lecturer-student interaction in the classroom at the same time. For very large classes, as in the case of UEW, MOODLE expanded the opportunity to optimize time usage and to address individual learning problems that would be impossible in such

classes in the face-to-face mode (Greyling et al., 2008; Florian, 2010; Florian & Zimmerman, 2015). The academics were also of the view that they have to be co-learners in this new learning environment in order to remain functional and current. However, from the perspective of the academics, teaching online or using MOODLE places more load on the instructors as they have to research a lot in order to cope with students during the face –to-face teaching in the classroom. The positive aspect of this is that it enables the academics to be resourceful and current.

Moreover, the result of the study revealed that the way academics used MOODLE for assessment reflected their mode of face-to-face teaching in the classroom. The academics who taught at the postgraduate levels and used project and problem based teaching often used discussion forum, offline assignments and practicals for their assessments. The academics who handled the undergraduate levels and used lecture oriented teaching often used MOODLE for multiple choice types, short answers, and matching types assessments which provided instant feedback. This implies that there is a correlation between the way academics teach in the F2F classroom and how they use MOODLE for assessment.

Factors that facilitate or impede the effective design and use of MOODLE learning environment by academics

According to the findings of the study the aspect of the workshop that participants found most useful included the chunking and overall planning of the course following Gagne’s principles of instruction. Moreover, one of the gains of the workshops, as the results indicated, was that the capacities of the academics in designing online courses and utilizing MOODLE in teaching and learning in the classroom were enhanced. These results imply that the various workshops conducted promoted the understanding of the academics and enabled them develop appropriate skills and required technical/ICT skills for the development and effective use of MOODLE in the classroom teaching. This confirms the finding of Palak (2004) that if academics’ concerns and needs are factored into their training, they are more likely to benefit from the training and apply skills and knowledge learnt.

Moreover, the findings of the study showed that incentives and motivational packages (e.g. promotion as promised by the VC) are necessary for encouraging academics to adopt educational technologies. This result confirms Gautreau (2011) and Wilson (2003) that motivation is the key to a faculty member’s decision to learn and implement technology into their teaching. Online course development places extra burden on academics in terms of initial time investment, particularly in a situation where large class sizes resulted in increase in workload for academics. This implies that aside the intrinsic motivation and monetary consideration; there is the need for university to extrinsically motivate academics to adopt and use educational technology to improve the quality of teaching.

However, the results indicated that academics would prefer hands-on practical activities and one-on-one mentoring during such workshops. The point being made here is that a “a one size fits all” model of training is not effective for academics because i) probably, academics are at different level of competency and i) different academic disciplines may have peculiar approaches to ICT integration. This means there is the need for educational technology facilitators to make sure that support is tailored to meet the various diverse learning needs and styles of the academics.

Academics would also appreciate adequate attention paid to efficient use of resources rather than focus on technological competencies. Academics needed to focus on more on using the MOODLE for effective teaching and learning and accessing other educational technology resources to develop their courses rather than technical details of MOODLE platform. According to the results, those academics (at the university) who are new to technology integration , the digital immigrants (Prensky, 2001), can be frustrated if training focuses more on formalism and technical standards even though ultimately the desire is to design, develop and use pedagogically sound courses and instruction. This implies that doing so many things simultaneously for technology novices can complicate an already overwhelmed academic.

Another challenge related to the above as indicated in the results of the study, is low technology competencies among academics. Even though academics were able to develop online courses after series of training; they only used a limited number of the tools and features contained in the MOODLE LMS. This placed limitations on the interactive and collaborative nature of the courses developed. This is in line with a finding by Unwin, et al. (2010), which revealed that even among experienced users in some African Universities; they used only a small number of the features available to them in their local LMS. This in turn affects the teaching and learning process as these tool sets provided in LMSs are to ensure that the right amount of support is made available in a host of ways for learners.

Moreover, according to the results, one major problem that was faced during the planning of the programme is related to institutional culture. The procurement law and cumbersome procedures in getting things done posed a great risk to the smooth sustainability of the Initiative at UEW. It took an awful long time to even set up the structures for the implementation process to begin. This finding is related to Kearsley and Marquardt (2001) assertion that to successfully implement e-learning projects, organizations and institutions may need to change the way their organizations are structured or they need some changes in their organizational culture. Initially, during designing and implementing of the E-learning project, it is more important to be familiar with organizational culture, structure, corresponding and other potentially conflicting strategies (McPherson & Nunes, 2006).

Finally, one dominant challenge encountered based on the findings of the study was the lack of adequate numbers of computers, computer laboratories and reliable high speed internet infrastructure for students to use the MOODLE for learning. Academics complained that their students had no reliable access to these laboratories after classes and for those who had computers to access the MOODLE learning environment had challenges with the internet connectivity. This challenge is not limited to UEW alone but most African universities. According to the report of Dzvimbo (2009), the former Rector of the Africa Virtual University in E-Learning News Africa portal, access to affordable and reliable internet connections and infrastructure are prevalent problems in all African countries. According to him, educational institutions on the continent are unable to provide sufficient infrastructure and buy sufficient bandwidth to support the educational, research, and administrative needs of students and faculties. This adversely affects delivery and teaching using eLearning methodologies that rely on high-speed internet access and readily available ICT infrastructure.

CONCLUSION

It is evident from the present study that academics who are involved in the design of e-learning courseware use it effectively to supplement the face-to-face teaching in the classroom to suite the varieties of learning needs of students in a large class to promote quality learning. There is a correlation between the ways academics teach in the classroom and how they use technology for assessment irrespective of their training to use technology. This finding suggests that individual academics conception of teaching influences the way they use technology in their instructional practice, and to some extent it is new. This finding adds new insight, from African/Ghanaian perspective, to academics conception of teaching and the way they use technology in the classroom. Further research is suggested to investigate this. Furthermore, it is argued based on the present study that academics who use e-learning courseware effectively to supplement face-to-face classroom teaching are resourceful and current since they have to research a lot in order to cope with students during face-to-face teaching in the classroom. It is also evident in the present study that when academics are involved in the design of e-learning courseware and receive adequate pedagogical and technical training and support consistently it increases their capacity building, motivation and promotes effective use of BL system (MOODLE and the face-to-face teaching in the classroom). This suggests that if administrators and management involve the academics from the onset of the training programmes of technology innovations and the training addresses their needs they would be more likely to adopt and use technology for instructional purposes.

Even though intrinsic motivation is important, according to the findings of the study, for technology to be institutionalized at the university by academics, extrinsic motivation such as promotion, acknowledgement, and money are incentives that cannot be contested. In this respect, further studies is suggested to investigate academics needs and concerns in order to be committed in the development and use of e-learning courseware for effective teaching and learning. The results of the study reiterate that digital divide, inadequate computer skills (especially among the digital immigrants), increased load of academics, and institutional culture are still a constraint to academics for effective training and use of ICTs for effective teaching and learning. In addition to the theoretical, methodological, and practical contributions of the present study, it provides useful lessons that would guide larger scale successful development and implementation MOODLE and BL in the context of learning situations of higher education with limited ICT resources. It is concluded based on the findings of the present study that Blended learning (MOODLE with F2F) systems seemed effective and efficient in developing countries (Ghanaian context). However, its development and implementation by the users (academics) present a number of challenges that need to be addressed in order to achieve its full potentials to promote the development of the 21st century competencies.

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