

# **European Journal of Educational Sciences (EJES)**

*2017 / September*

Publisher:

**European Scientific Institute,  
ESI**

Reviewed by the "European Journal of Educational Sciences" editorial board 2017

*September 2017 edition vol. 4, no. 3*

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*ISSN 1857- 6036*

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***EJES, Team***

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# The Impact of Bridging Whole-Student Understanding Between Elementary Students and Preservice Teachers

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doi: 10.19044/ejes.v4no3a1 [URL:http://dx.doi.org/10.19044/ejes.v4no3a1](http://dx.doi.org/10.19044/ejes.v4no3a1)

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## Abstract

This qualitative study reviewed the preparedness of preservice teachers to meet the needs of struggling readers in an urban Florida school. The research was guided by the overarching question: What is the impact of targeted diversity training on rural university preservice teachers when creating performance-based tasks (PBTs) for urban-core elementary low-performing students? The research reviewed the impacts of specific diversity training of preservice teachers on quality construction of a PBT intended to meet the needs of diverse, urban-core, and academically struggling elementary students. Data triangulation was employed by reviewing researcher field notes during the targeted-diversity training sessions, a student pre- and posttreatment survey, and archived communication with the program's philanthropic liaison. Data were analyzed using open coding to allow themes to emerge. Key findings indicated common impacts through the lenses of logistics, collaboration, and reality. Implications speak to preservice teachers, educational partnering, and future teacher employment.

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**Keywords:** Preservice teachers, whole child, diversity and literacy.

## Background

As state and national teacher-preparation accrediting agencies are undergoing transformation, literacy-instruction preparation is imperative to developing an elementary teacher (Cuthrell et al., 2014). Although the curricular areas of mathematics, science, and literacy are all taught in an elementary teacher-preparation programs, literacy instruction requires greater credit hours to be fulfilled (Department of Elementary and Secondary Education [DESE], 2016). As Stevens-Smith, Warner, and Padilla (2014) noted, "A strong foundation in literacy underpins success in every discipline"

(p. 109). This quotation illustrates the notion of the importance of preparing elementary teachers to be quality literacy-learning facilitators.

Although literacy-instruction preparation mandates inclusion of the subcategories of remediation, assessment, and pedagogy, a disconnection persists between these notions and what Maslow (Karodia, Soni, & Soni, 2016) recognized and what Noguera, Darling-Hammond, & Friedlaender (2015) reported to be crucial for all teachers to understand: “the context of education, both inside and outside of school” (p.2). Although the foundational understanding of how to teach a student to decode words and how to become a fluent reader are important, if the student is coming into the classroom afraid or does not believe their race is valued, the reading lesson the teacher has planned will likely not impact the student.

Understanding the “whole child” or the various life experiences the child brings to the classroom is extremely important to meeting the child’s primary needs (Suarez-Orozco, Suarez-Orozco, & Sattin-Bajaj, 2010). These are not new ideas, as illustrated by Maslow’s hierarchy of needs research performed in the 1950s; however, it remains to be an area underemphasized in teacher-preparation mandates (McLeod, 2014). Without a teacher fully realizing the needs a child brings with them to the classroom, any other instructional efforts can be hollow. For example, if a child comes into the class feeling hungry, no matter how entertaining a teacher is during class, the child may not be able to focus on the instruction taking place. Another example is if a child comes to a school where his own cultural background is inapparent or not vital, this student may feel hesitant to fully interact in the classroom. If a student comes to school feeling uncertain, afraid, or distracted, and the teacher is not cognizant of these issues and how they can impact the student’s learning, the teacher is not meeting the student’s needs to develop scholastically (Ellis, 2008; Jensen, 2009; Payne, 2002), which can negatively impact the student, preventing the student from developing academically to full potential, and can negatively impact the teacher’s ability to retain the job or desire to stay in the profession (DESE, 2015; Johnson, Berg, & Donaldson, 2005; Scott, 2008). For this reason, further investigation of the impacts of direct diversity training on preservice teachers is needed. Such investigation would further inform teacher-preparation institutions and elementary school administration about the merits of direct diversity instruction on the development of teacher’s understanding of how to meet diverse students’ needs through the tasks they develop.

Students who are low performing in the areas of mathematics and language arts at Acme Elementary School in Urban Center County, FL, were invited to enroll in the Ambition Academy. The Ambition Academy is an after-school institution in the school building, aiming to help meet the scholastic, emotional, and social needs of low-performing students who attend

the school. The endeavor is supported by a philanthropic group in Urban Center County, who requested assistance from Rural University elementary education majors to help build a curriculum to help meet the three areas of need of Ambition Academy. As this endeavor was new to the district and to the university, research on the impact of the project on the elementary students and Rural University undergraduate education majors was measured through qualitative measures to answer the overarching question: What is the impact of targeted diversity training on rural university preservice teachers when creating performance-based tasks for urban-core elementary low-performing students?

### **Key Terms**

The following concepts can have varying meanings; to hold constant the intended meanings, we define these concepts as they pertain to this research.

#### **After-school programs.**

Acme Elementary School created an after-school program to which students were recruited based on reading levels, home life, and propensity for drop-out. A decade of research and evaluation studies, as well as large-scale, rigorously conducted syntheses across many research and evaluation studies, confirmed that children and youth who participate in after-school programs can reap a host of positive benefits in a number of interrelated outcome areas: academic, social/emotional, prevention, and health and wellness (Little, Wimer, & Weiss, 2008) Programs with a strong intentional focus on improving social and personal skills have been found to improve students' self-esteem and self-confidence (Durlak & Weissberg, 2007). Research and evaluation studies have shown that participation in afterschool programs have a positive impact on juvenile crime and help reduce pregnancies, teen sex, and boys' marijuana use (Goldschmidt, Huang, & Chinen, 2007; Philliber, Kaye, & Herrling, 2001; Philliber, Kaye, Herrling, & West, 2002).

#### **Performance-based task.**

In the act of learning, people obtain content knowledge, acquire skills, develop work habits, and practice the application of all three to real-world situations. Performance-based learning and assessment represent a set of strategies for the acquisition and application of knowledge, skills, and work habits through the performance of tasks that are meaningful and engaging to students (Educators in Connecticut's Pomperaug Regional School District 15, 1996). Preservice teachers create PBTs for after-school programs based on student reading levels, book choices, and interest inventories. Preservice teachers are assigned a student with the book selection and proceeded to create

engaging tasks aligned with standards. These tasks are typically open-ended, establish novel and authentic contexts for performance, and integrate two or more content areas as well as 21st-century skills (Defined Learning, 2015). Because these PBTs are open-ended, preservice teachers create criteria and scoring rubrics for evaluation. Performance tasks yield a tangible product or performance that serves as evidence of learning (Defined Learning, 2015.) Through this process, assignments become more authentic and more meaningful to students.

### **Preservice teachers.**

Preservice teaching is a period of guided and supervised learning and teaching. The university preservice teacher is gradually introduced to the teaching role for a particular class by a mentor or cooperating teacher. The preservice teacher begins as an observer and finishes the preservice-teaching experience as a competent professional (Virginia Wesleyan College, 2017). Guess-Newsome & Lederman (1991) found that preservice teachers are positively influenced by opportunities to think about teaching subject matter.

### **The Project Design**

This qualitative research was a bounded case study examining pre- and postdiversity surveys and researcher field notes, and reviewing archived communication with the philanthropic-program liaison. Additionally, the research incorporated general observations of the school and university, and included an analysis of historical documents and artifacts related to the school and university programs. This triangulation of data provided trustworthiness to the study (Merriam, 1998).

### **Participants**

The rural university preservice teachers involved in this study were teacher-preparation candidates who were at the midpoint preparation level or beyond in their elementary education studies. Students became participants voluntarily, not through a course. They chose to be a part of this voluntary diversity training and performance-based-task creation team to receive diversity credit and to positively impact urban elementary students.

The third- through fifth-grade elementary students involved in this study were in an urban district and were all selected to be in the academic assistance, afterschool program, Ambition Academy. Students were selected due to their low state standardized test scores, their potential for drop-out, and their high socioeconomic needs. The Ambition Academy is a highly selective program, wherein someone has seen that included students could be impacted by additional time with mentors and additional curriculum review



## **Implementation Process**

These rural university preservice-teacher candidates had the opportunity to meet outside of class time to develop PBTs based on academically rewarding texts used by the elementary Academy. The preservice-teacher candidates met with two faculty members and received a targeted-diversity awareness-training protocol, ending in the development of the PBT. The process took approximately 5 hours to complete by each student. Once PBTs were completed, faculty members sent the PBTs to the Ambition Academy coordinator for implementation in the elementary after-school Academy program.

The targeted-diversity training involved five areas of study by preservice teachers. Preservice teachers maneuvered through the five areas of diversity training, led by a professor through each station. The first station of study was reviewing the elementary students for whom they would be writing the PBTs. This was achieved by first watching a 5-minute video the school had made about the Academy, including direct testimonials by students in the program. Students discussed their aspirations for the future and how the Academy has impacted their lives. Some students mentioned their home situations and how being part of the Academy helped them in that way as well. Next, preservice teachers reviewed Academy students' demographic information and aggregated state standardized-test information. A professor led a discussion about the data and how it could impact PBT construction. The next station was a review of research on poverty and racial diversity. Preservice teachers read excerpts from Payne (2002) and Jensen (2009) prepared by the faculty. A professor embarked on a discussion with the preservice teachers about how this knowledge about the intersection of poverty and education could help preservice teachers refine their targeted growth of Academy students while helping preservice teachers better select appropriate literature that would enhance students' understanding of the world, but not hinder their cultural development as an urban-core student. The literature selection was the fourth station in the targeted training. As the final training station, students began developing their version of a PBT with the continued support of the professors.

## **Research Findings**

Using various tools, data accrued. One data-collection tool was a survey completed by preservice teachers prior to completion of the diversity training and the same survey completed after diversity training, including the creation of the PBT. Researchers made field notes while working with preservice teachers on the project, including gathering direct quotations from preservice teachers during the diversity-training experience. Additionally, e-mails were reviewed from a philanthropic after-school-program liaison who

was working with the school's afterschool program. Also, historical data were reviewed from the school's and state education department's websites.

In relation to the overarching question guiding this research—What is the impact of targeted diversity training on rural university preservice teachers when creating PBTs for urban-core elementary low-performing students—research showed increased growth in teacher preparedness following targeted diversity training. The areas most impactful were (a) logistics involving time consumption, availability of resources, and space used; (b) collaboration between school officials and preservice teachers, teacher-to-teacher collaboration availability, and teacher-to-student interaction; and (c) reality and the understanding of the reality of the life the students lives, the reality of the impact a teacher can have on a student and the student's future, and vice-versa: the impact a student can have on a teacher's future.

### **Logistics**

Although many preservice teachers did not reference logistics, it was seen in field notes and e-mail trails. As the development of the PBTs began, preservice teachers were allowed to use any book they chose and thought was a rich authentic text for students to read. However, when those initial PBTs were given to the school, not all books were available to students through the school library. This made follow-through on PBT difficult. After reflection, the researchers procured electronic listings of books available at the local library, and began having the preservice teachers only write PBTs for those texts.

Another logistical issue, noted by the researchers in the field notes and e-mail trails, was the physical set-up of the room where preservice teachers met to develop the PBT. At the beginning of the study, the researchers planned to conduct instruction of diversity issues and issues facing students at the Academy (racial diversity, socioeconomic diversity, and linguistic diversity); however, it quickly became apparent that the project would not work effectively within those structural constraints. Preservice teachers, much like full-time teachers, do not have the luxury of dedicating a large chunk of time to an effort on one day. Instead, they needed to develop a system in which preservice teachers could move from station to station, learning about the students for whom they would be writing the PBT. The stations were a video of students and the Academy, information about poverty (following Payne's notions, Jensen's concepts, and ethnic implications for literacy selection), and state standards needing to be fulfilled. With these three concepts, students were able to see the whole child, the needs they had to meet and the curriculum in which students need instruction.

As all preservice teachers were mandated to work on most development in the room, the researchers found this led to great opportunities

for preservice teachers to ask questions about cultural issues surrounding the Academy students. Also, this structure of workspace created greater collaboration among preservice teachers, with one preservice teacher noting how “nice it was to be able to work in the room together to bounce ideas off of each other.” Another commented it was nice to be working together in a more cohesive “team planning,” similar to what they assumed it would be like if they worked in a larger district where they would have to perform similar functions.

### **Collaboration**

In the study, researchers referenced various types of collaboration that occurred, with teacher candidates commenting on the benefit of collaborating with the Academy and the researchers noting collaboration as teacher candidates developed their PBTs in the classroom. Preservice teachers were able to work together in the same space, affording them the opportunity to collaborate, which left them feeling that the product they were developing was richer and would have a more effective impact on students’ development toward meeting state standards.

Additionally, the researchers noted the collaboration that was able to naturally emerge between the researchers and preservice teachers. Preservice teachers asked rich questions about students’ ethnicity, language ability, and socioeconomic status and how it would impact students’ ability to successfully complete a task. One issue discussed was the school’s inability to purchase new books. Also, preservice teachers had not considered that parents would not be able to purchase books. Many epiphanies emerged when the discussion centered on parents having to decide between purchasing food or a book for their child. This was compounded by the notion that preservice teachers had seen children’s faces and knew who were going to be the children completing the tasks. In effect, seeing their faces created a quasicollaboration between the preservice teacher and the students.

### **Reality**

One area highlighted by many participants was the reality illuminated through working with real students who have real lives that the college students’ work would impact. This comingled many times with the notion of collaboration; that collaboration allowed for or afforded a real-life feel to the development of the PBT. Originally, many preservice teachers identified interest in the experience because of the diversity hours they would gain toward graduation. However, as program construction progressed, the more preservice teachers made comments such as, I “didn’t care about the diversity hours. [I] was excited to help the kids in the school.” Another student commented, “[I liked] knowing that [I was] helping the kids and to see the

kids on the video.” The same student said that it made “[I] look at the PBT differently, because it was real now.”

During the training sessions, including the creation of the PBTs, the two faculty members kept field notes, including comments they heard students make during the training, and comments students made to them directly. Some made directly to the faculty routinely heard were that preservice teachers “liked it because it was for real kids.” One participant, after watching the video of students who would be doing their PBT, said “[I would] like to go to Florida” with the faculty to meet the students in person. Another student indicating liking to watch the video of the students and “knowing that those are the kids that will do the PBT—it is nice to help them out.”

Students completed surveys prior to undergoing the diversity-training experience, including the creation of the PBT. After students completed the work on the diversity experience, they completed a postexperience survey. Of the students who responded to the postdiversity-training survey, 100% responded to the open-ended question saying they felt the diversity-training experience had helped them better understand how to work with their future diverse population of students; 80% of students responded to the Likert-type scale that they believed they were at the same level of preparedness to work with diverse students, whereas 20% responded that they believed their preparedness had increased.

### **Making Meaning**

Milk and cookies go together. This mixture results in an integrated sensory experience that brings forth a great pairing, a mixture blending with a feel good experience. The combinations of two entities (Rural University, Ambition Academy) in our research project resulted in these three attributes of the unification:

### **Perfect Pairings**

Just as milk and cookies equal the perfect pairing, preservice teachers and elementary students fused. Preservice teachers at Rural University are in a predominately rural, Caucasian environment. As a result of this geographic and ethnic isolation, experiences with heterogeneous populations are minimal. Of elementary students at Ambition Academy, 99% receive free or reduced-price meals and are predominately African American with minimal contact with Caucasian environments. These students are geographically isolated as a result of their socioeconomic status. This merger also coupled a higher institution of learning with a public school. The tall (preservice teachers) were matched with smalls (elementary students, Grades 3–5) for relevant and authentic planning in literacy. Additionally, preservice teachers unified with Ambition Academy to access available literature and other school supplies

necessary to complete tasks. Talls even conducted a supply drive to ensure smalls would have the adequate materials to accentuate the PBTs.

### **Mixture Blending**

Just as milk and cookies mix to form a unique and desirable blend, preservice teachers were assigned PBTs to create for the smalls at Ambition Academy. This merger began with understanding of instruction and interests of partners at the elementary school. The consolidated vision became clear and meaningful when creations of PBTs were in the hands of smalls at Ambition Academy. Rather than an assignment to be turned in for a grade, the genuine relevance was an epiphany because this project became an endeavor of love and labor that was to be placed in the hands of the smalls.

### **Feel Good**

Just as milk and cookies cause a release of chemicals for a prodigious sensation, the same feeling was internalized as this project unfolded. Skyping with the director of Ambition Academy and viewing several demonstration videos resulted in personalized, precious, and picture-perfect participation. Likert results were received from smalls upon completion of the PBTs. Preservice teachers soundly affirmed their excitement to help these learners with a real-world experience.

### **Conclusion**

Diversity training for preservice teachers is a prominent topic in teacher preparation programs (Council for the Accreditation of Educator Preparation, 2015). Review of possible curricular impacts on preservice teachers' awareness and on the future students of preservice teachers needs to be conducted (LeMaistre & Pare, 2010). As educators move into this latest era of teacher training, they owe it to future generations to heed the research and tackle the research still needed to better understand how teacher-preparation training, particular to diversity, impacts the preservice teacher, the K–12 student, and the teaching profession as a whole (Johnson et al., 2005). Payne (2002) and Jensen (2009) each provided a wealth of research about the impacts of poverty on the whole child. However, with a more discrete review of the impacts on specific curriculum provided in teacher-preparation programs, and if relationships exist between preparation programs and K–12 systems to use university-prepared curricula, more understanding can be forged. Through understanding, change in the curriculum and impacts to K–12 can occur.

### **Preservice Teachers**

As preservice teachers experienced the creation of authentic lesson planning, they more highly valued commitment to the plan. As preservice

teachers made a connection, face to face, with a struggling learner, the obligation to individualize instruction manifested. As preservice teachers reviewed the students, their demographic information, and their living situation, and researched poverty prior to building curriculum pieces, the quality of the plan improved. As preservice teachers discovered the dichotomy of poverty in a school setting, empathy and passion toward the circumstance heightened.

### **Educational Partnering**

Partnering with a K–12 school early in coursework increased awareness of the institutional setting for the preservice teacher. Collaboration between the administration and the preservice teacher fostered collegialism and rendered posing and pressing questions regarding the profession and the needs of the whole child. As students completed the lesson plans created by preservice teachers, students and classroom teachers provided feedback and reflection.

### **Future Teaching Employment**

Preservice teachers will be competing for employment. Those who can prove knowledge gained from veritable and genuine opportunities that work directly with children, rather than about children, will be better prepared in their future classrooms. Additionally, those preservice teachers who exude passion and joy and realize the importance of meeting individual needs will be at the top of the list for hiring.

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# Enhancing the Language Literacy Skills of Children with Specific Learning Difficulties; A Review on the Use of Technology and the Application of Innovative Teaching Methods

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doi: 10.19044/ejes.v4no3a2 [URL:http://dx.doi.org/10.19044/ejes.v4no3a2](http://dx.doi.org/10.19044/ejes.v4no3a2)

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## Abstract

The cultivation of language literacy has been one of the main goals of the educational process. However, students with Specific Learning Difficulties (SLD) are usually unable to keep up with the rest of their class as they face difficulties in their reading and later in their written speech skills. The aim of this paper is to present a brief literature review of teaching strategies and the applications and software that can enhance the basic competences and skills directly linked to the language literacy of students with SLD.

The use of new technologies for the language education of children with SLD is a great advantage because the teacher is able to apply innovative teaching methods. These methods contribute to the reduction of attention and memory problems and to the development of the necessary language skills of students with SLD by enhancing their interaction and collaborative learning. The use of technology can contribute to the appropriate adaptation of curricula, to the creation of multiple teaching activities and to the reduction of the attention and perception difficulties of these students.

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**Keywords:** Specific Learning Difficulties, language literacy, new technologies.

## 1. Introduction

The term "literacy" is used by experts to refer not only to the technique of reading and writing, but also to the ability of the individual to understand, interpret and critically deal with different types of speech, to produce a variety of speech, to understand and negotiate the meaning of messages within their social context and generally to control their life and the environment through

written discourse (Hatzisavvidis, 2010). The aim of language literacy is therefore to understand and produce spoken and written language, and the communication and cultivation of language skills (Matsagouras, 2007).

However, pupils with Specific Learning Difficulties usually deviate from the level of their class as they encounter difficulties, which are initially located in reading and later in writing too. Reading difficulties arise from different deficits that the students may show, and so different pedagogical actions are required, according to the ones needed for students with deficits in visual or audiophonic processing. Reading difficulties are usually accompanied by difficulties in writing, which may take the form of mistakes, such as reversals, confusion of letters, omission or addition of letters, etc. Curriculum can be customized at different levels in order to create an educational environment for different children with different needs. For example, the content of the lessons, the adaptation of teaching strategies and, in particular, the introduction of new forms of technology that meet the particular needs of pupils with an SLD can be changed (Pozzi, 2011). The use of technology can help teachers to provide students with SLD the much needed personalization of learning activities, the immediate feedback as well as the systematic and continuous practice (Pozzi, 2011).

A number of studies have demonstrated that computer usage is beneficial when used in general education. However, the main goal of this brief review is to investigate how positive are the effects of technology on the language literacy skills of children with SLD, so as to fill the gap in the current literature and to spur further research.

## **2. The use of technology for the improvement of the language literacy of children with learning difficulties.**

The use of technology can contribute to the appropriate curriculum adaptation, since many teaching activities can be used to mitigate the basic difficulties of students such as attention and perception difficulties so as to cater for their need to personalize exercises, to receive immediate feedback or to perform exercises systematically.

Educational technology programs include training programs, simulations, games, authoring programs, problem solving programs and strategy teaching programs (Panteliadou & Argyropoulos, 2011). At the same time, technology can contribute to the frequent collection and recording of data from a curriculum-based assessment as well as in teaching, while at the same time it can support the application of new teaching methods in a variety of subject areas (Dawson, Heathcote & Poole, 2010).

Findings suggest that the use of high quality interactive e-storybooks may support emergent literacy development through the use of scaffolding, thus, supporting vocabulary development, engagement, and comprehension of

the story (Moody, 2010). E-storybooks or Electronic books are defined as an electronic form of a book with features similar to those of a traditional print book including pages that “turn,” and digital features that can assist the reader such as word pronunciations, text highlighting, and text-to speech options, and hypermedia (e.g., video, animations, and sound) (Adam & Wild, 1997; Horney & Anderson Inman, 1999; Korat & Shamir, 2004).

More specifically, E-storybooks are widely used with students who are beginning to learn to read or diagnosed with reading disabilities (Zucker, Moody, & McKenna, 2009). Their content may be cut off, detached or stored for later use (Vassiliou & Rowley, 2008). At the same time, specific adjustments such as changing the type or font size and screen brightness make reading easier and more efficient. Indeed, according to Tzivnikou (2015), the ebook with its features makes it more feasible to design a course in a more spherical way and is included in the list of adaptations and differentiations proposed for pupils with special educational needs.

It is a fact that students with difficulties in their written speech due to motor problems, benefit in particular from the learning of systematic typing. Indeed, according to Mponti (2013), typing of sentences or texts on the computer contributes to the development of all the individual factors involved in the written discourse, such as reading ability, phonological competence which in turn are related to spelling and writing. This is because the recording of a word on the computer is preceded by its letter-to-letter analysis, the pre-intonation of its letters, spacing between words, spelling, as well as the grammatical and editorial correctness of words.

Moreover, it is useful to use training programs through play or through exercises that can motivate these children to practice and improve their spelling. In fact, through typing, students see the word, listen to it, and then write it; on the one hand, they learn exemplary finger movements that help them remember the correct spelling, and on the other hand they are being helped to connect the sound with the graph, improving the phonological competence of the students (Hasselbring & Candyce, 2000; Kumar, Paek & Lee, 2012).

There are language learning applications with a virtual tutor for language learning and speech training. Several advantages of utilizing a computer-animated agent as a language tutor are clear, including the popularity of computers and embodied conversational agents. Computer-based instruction is emerging as a prevalent method to train and develop vocabulary knowledge for individuals with special needs (Massaro, 2004).

Also, it is possible to facilitate the connection of sounds and graphs through computer programs that read the texts while also guiding the reader by highlighting on the screen each letter or word spoken. This method can help with reading decoding problems (Kumar, Paek & Lee, 2012). At the same

time, some programs allow the user to click on an unknown word in order to hear its synonym or its explanation, thus improving and enriching their vocabulary. However, the most important element of these programs is the fact that they present the reading process in small steps as well as that they give students an incentive to read (Kumar, Paek & Lee, 2012).

### **3. The use of visual aids and concept maps in class as useful tools for the enhancement of the students' literacy abilities.**

In addition, the use of visual aids, graphemes and concept maps enhances the understanding and strategic thinking of students, who can have direct access to vocabulary or concept explanations as well as other useful information (Castellani & Jeffs, 2001). Indeed, concept maps are designed so that both students and teachers can point out the key ideas to which they should focus their attention, therefore avoiding any stimuli that could potentially distract them (Zaid, 2011). This method can help students a great deal; especially those who show attention difficulties, and can improve their ability to produce written speech by exercising the use of the conceptual map as a metacognitive tool (Novak, 2010).

More specifically, the concept map is a practical way of taking notes when delivering a lesson, as well as a tool for organizing their ideas during the phase before they begin writing. Planning, which is the initial writing phase of a text, increases the pupil's ability to perform mental work and contributes to the student's best performance when she reaches the writing stage. Moreover, the use of the Internet promotes the creation of a social reference framework for students with Learning Difficulties (Stanford & Siders, 2001). Internet-based videos enable connectivity, efficiency, interactivity and flexibility in teaching, by involving teachers and learners in activities that encourage the cultivation of communication skills and the presentation of ideas and information aiming to meet a variety of needs. In addition, as a source of information and means of communication, it is ranked as one of the powerful educational tool that facilitates access to learning, promotes and changes pedagogical practices by making use of sound, image and multimodal text (Cruse, 2007).

Using Internet video in education releases teaching and learning from the physical boundaries of the classroom and nullifies access time to learning resources. It also extends the experiences of children and achieves fundamental and qualitative changes in the nature of learning and teaching in a wide range of subjects.

### **Conclusion**

Making use of ICT abilities can make a significant contribution to upgrading the nature and form of knowledge provided to people with learning

difficulties. In addition, their use brings Special Education closer to society and to the modern approaches of teaching and pedagogical research. The current bibliography includes several papers that present mainly positive results from the use of technologies both in general and in special education towards the achievement of specific cognitive, social and emotional goals (Keengwe, Schnellert & Mills, 2012; Walker, Rummel & Koedinger, 2011).

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# Performance Management in Kenyan Public Schools: Implications and Challenges

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doi: 10.19044/ejes.v4no3a3 [URL:http://dx.doi.org/10.19044/ejes.v4no3a3](http://dx.doi.org/10.19044/ejes.v4no3a3)

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## Abstract

This paper reports findings of a recent conceptual literature review of teacher performance management systems as implemented by the Teacher Service Commission in Kenya. It was undertaken by reviewing several TSC circulars, documents used in teacher management, HR literature and the TSC Act. It reflects the perspectives of the authors and TSC management in relation to HRM good practices and theories. Its main purpose was to apprise processes from earlier procedures, to ascertain current levels of use and satisfaction, and to determine whether performance management has become a more effective strategic tool in the human resource management repertoire. The conclusions suggest, that the use of, and satisfaction with performance management systems remain challenging, although there are some indications that the increasing integration of the current perspectives of HRM appears to encourage more strategic links between individual, group, and organizational outcomes to improve TSC teacher management systems.

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**Keywords:** Performance management, performance contract, teacher service commission.

## Introduction

The review of employee performance and the management of its collective contributions to organizational effectiveness, have been perceived as a combination of informal and formal approaches which together have the potential to contribute to the motivation of individual employees and their work groups, to evaluate the efficacy of all human resource management (HRM) functions, and to provide organizations with a strategic advantage in their ongoing pursuit of competitive goals and imperatives. Recent studies,

together with considerable anecdotal industry evidence, suggests that many organizations and their senior managers still regard performance management as a mechanistic annual ceremony which is a necessary evil, but has little bearing to their 'bottom line', with minimal recognition and understanding of the powerful tool which it can become (Price, 2011).

Performance management (PM) is a concept in the field of human resource management which is goal-oriented directed toward ensuring that organizational processes are in place to maximize the productivity of employees, teams and ultimately, the organization. It is a major phenomenon in accomplishing organizational strategy because it involves measuring and improving the value of the workforce (Gianneto, 2009). PM includes incentive goals and the corresponding values so that the relationship can be clearly understood and communicated. There is a relationship between incentives and performance. Aguinis, (2009) defines "Performance management as a continuous process of identifying, measuring and developing the performance of individuals and aligning performance with the strategic goals of the organization". Performance management often is mistaken as performance appraisal but the latter is just a part of the former.

Performance management can also be defined as a strategic and integrated approach to delivering sustained success to organizations by improving the performance of the people who work in them and by developing the capabilities of teams and individual contributions (Armstrong & Baron, 1998). It therefore embraces both behaviour and outcomes. It is important to consider both inputs and outputs when analyzing employee performance.

Various experts have explained the concept in diverse ways. Mabey (1999) has prescribed the model of performance management system in the form of 'performance management cycle'. This cycle has 5 elements which suggest how performance management system should be implemented in an organization. These elements include: Setting of objectives; Measuring the performance; Feedback of performance results; Reward system based on performance outcomes and amendments to objectives and activities.



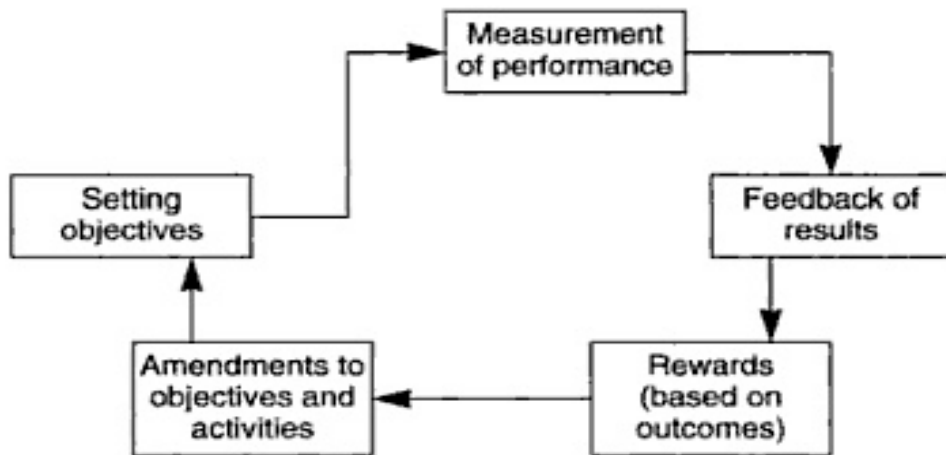


Figure 1. Performance management system

Source: Mabey (1999)

Researchers have advanced two theories underlying the concept of performance management (Mabey, Salaman & Storey, 1999): The goal setting theory and Expectancy theory. Goal setting theory by John Locke suggests that the individual goals established by an employee play an important role in motivating him/her for superior performance. If these goals are not achieved, they either improve their performance or modify the goals and make them more realistic. In case the performance improves it will result in achievement of the performance management system aims (Salaman, Storey & Billsberry, 2005).

Expectancy theory had been proposed by Victor Vroom in 1964. This theory is based on the hypothesis that individuals adjust their behavior in the organization based on anticipated satisfaction of valued goals set by them. This theory underlies the concept of performance management as it is believed that performance is influenced by the expectations concerning future events (Salaman *et al*, 2005).

## RELATED LITERATURE

The measurement of employees' performance is the backbone of any organization's management. Organizations usually measure employee performance by assessing how much contribution the employee is making towards its growth. Performance appraisal refers to the evaluation of employees, providing them with valuable feedback and creating a positive effect on future performance (Bohlander & Snell, 2010). Employee performance depends upon several factors such as; conducive work environment, work profile, compensation, bonus system, job satisfaction, organization policies and technology. These factors play an important role in

determining the employee productivity and hence the overall organizational development (Gomes & Romao, 2014).

According to TSC Corporate Communications Division 2016, in learning institutions, performance management is a systematic process of improving an institutions' performance by developing individual performance targets and those of teams. This enables heads of institutions and teachers to be involved in improving the success of their schools. The Kenya government introduced performance management in 2003 as part of its public-sector reform programme. This ensured that all public officers except for teachers were put under performance management programmes. In January 2016, Teachers Service Commission rolled out Performance Contracting for Head of Institutions (PC) and Teacher Performance Appraisal and Development (TPAD) for all teachers. The PC and TPAD are the performance management tools meant to enhance the quality of teaching and ultimately improve learning in the institutions. According to the TSC CEO Nancy Njeri Macharia in an article in the Daily Nation, Tuesday 25th April 2017, the reforms are intended to build a performance –oriented culture and instill accountability in public learning institutions.

According to TSC Annual Report 2015/2016, performance contracting and performance appraisal systems are part of the broader Public-Sector Reforms aimed at improving efficiency and effectiveness that leads to attainment of the organizational objectives. They create an understanding on how to improve performance on what should be done and how achievements will be measured. Performance management for teachers is provided for in Section 11(f) of the TSC Act which requires the commission “to monitor the conduct and performance of teachers in the teaching service and in Regulation 52 the code of Regulations of Teachers (2015). It states that “the commission shall develop an open appraisal system for teachers to strengthen supervision and to continuously monitor the performance of teachers in curriculum implementation. The TSC Annual Report 2015/2016, further institutionalized and rolled out the Performance Contracting (PC) and Teacher Performance Appraisal and Development (TPAD) system for heads of institutions and teachers to enhance effectiveness in curriculum implementation for improved learning outcomes.

Earlier a pilot programme named Teacher Performance and Integrity project (TEPIK) funded by the British Council was launched. According to the TSC Annual report 2014/2015, the Commission secured a two-year grant (2013-2015) for TEPIK. This project was jointly implemented by Teachers Service Commission and British Council. The project facilitated the revision of the Code of Regulations for Teachers and the Code of Conduct and Ethics which have been published. The grants were also used to sensitize teachers on

the provisions of the codes distributed to all public institutions across the country.

Capacity building for staff at TSC headquarters and six counties (Kwale, Samburu, Nyeri, Uasin Gishu, Kitui and Kisumu) to support school based teacher performance was also carried out including development of appraisal instruments. Further, capacity development for TSC project staff was done where the TSC County Directors and TAC tutors were trained on the implementation of teacher appraisal system. In addition, 500 teachers were inducted in the new system. More than 75 per cent of the pilot schools recorded improvement in academic performance. Motor cycles were procured and distributed to the six pilot counties to be used for monitoring Teachers Professional Development (TAD).

### **Tools of Performance Management**

Strategic Plan; Service Charter; Performance Contract; Work plans (Divisional & Individual); Monitoring and Evaluation Reports; Performance Appraisal Reports and Integrated Personnel and Payroll Data (IPPD).

### **Meaning of Performance Contracting**

Performance based contracting is a results-oriented contracting method that focuses on the outputs, quality, or outcomes that may tie at least a portion of a contractor's payment, contract extensions, or contract renewals to the achievement of specific, measurable performance standards and requirements. It is a management contract tool with a clear set of objectives to be achieved within a given period (Armstrong, 2007).

The policy decision to introduce Performance Contracts in the management of the Public Service was conveyed in the Economic Recovery Strategy for wealth and Employment Creation (ERS, 2003), since then public sector has been undertaking annual performance contracting. The national guidelines are issued by the government to provide guidance to institutions in the process of implementing Performance Contracts in the Public Service. The Teachers Service Commission has therefore derived from the National Performance Contracting Guidelines for the 12<sup>th</sup> PC Cycle to guide heads of institutions in implementing their performance contracts.

The Performance Contract has been cascaded from the Commission Secretary and the process involves all cadres of TSC employees for complete integration. The integration includes linking the performance Contracts with the performance appraisal system and the performance incentives and sanctions. TSC, Corporate communication, (2016) states that heads of institutions negotiate on targets to be set with their respective TSC County Directors thereafter sign the performance contract. A signed Performance

contract is an agreement between the teacher and the Teachers Service Commission which is done at the beginning of every year.

Improvement in individual or institutional performance only occurs when there is a feedback mechanism for evaluation. Feedback is having the outcomes of work communicated to the employee or institutions. For an individual employee, performance measures create a link between their own behaviour and the organization's goals. For the organization or its work unit's performance measurement is the link between decisions and organizational goals.

According to the TSC Handbook (2015), the performance contract is a commission's management tool for measuring performance against set performance targets. It is a freely negotiated performance agreement between the TSC, acting as the manager of the teaching force in the public schools, and the heads of public schools. The performance Contract specifies the mutual performance obligations, intentions and responsibilities of the parties for a given contract period.

The TSC has clearly stipulated the parties who will be involved in the performance contracting according to the Corporate Communications Division, (2016). The TSC officers at the Counties led by the TSC County Directors, Sub-County Directors and Curriculum support officers will act as the supervising agent with the main roles being; Monitor and evaluate performance; Formulation of implementation guideline

The implementing agents are head teachers in primary and post primary institutions with the main roles being; Responsible for implementation of the PC and Give progress reports on level of achievements.

### **Objectives of Performance Contract**

The objectives of performance contract strategy in the public learning institutions include: Improving accountability for results at all levels; Reversing the decline in teacher performance with a view to enhancing learning outcomes; Institutionalizing performance oriented culture in the public learning institutions through introduction of an objective open performance appraisal system; Measuring and evaluating performance; Linking reward to measurable performance; Strengthening and clarifying the obligations required of the TSC and its employees to achieve agreed targets (TSC, 2016).

### **Performance Contract Expected Outcomes**

The expected outcomes of the introduction of Performance Contract in the public learning institution include: Improved efficiency and professionalism in teaching service delivery for enhanced learning outcomes; Judicious management of public educational resources by ensuring that

holders of public office (teachers and heads of schools) are held accountable for results; institutionalization of a performance-oriented culture in the public schools; Ability to measure and evaluate performance; Ability to link reward for work to measurable performance; Instilling accountability for results at all levels in the teaching service; Ensuring that culture of accountability pervades all levels of Government; Reduction or elimination of reliance on Exchequer funding by Public Agencies and Ability to strategize the management of public resources (TSC/PCPH/ANNEX 4).

### **General Guidelines (TSC, 2016)**

1) All principals of public secondary schools and Head teachers of public primary schools will sign a performance contract with Secretary/Executive Teachers Service Commission. 2) The principals/Head teacher of Institutions and secretary (or an appointed representative) Teachers Service Commission must be present in person during the signing of the Performance Contract. 3) All targets once signed, cannot be changed midstream. 4) All primary and post primary public institutions are required to ensure availability of verifiable evidence of achievement for purposes of evaluation. 5) Primary and Post primary institutions that fail to submit performance reports based on the duly signed (Performance Contract) for evaluation, or because they declined to sign a Performance Contract shall be sanctioned. 6) The heads of institutions will monitor and report on the progress of performance targets on monthly, termly and annually using the prescribed M&E instruments. 7) The heads will submit performance target progress reports within ten (10) days following the end of a month/term/year to respective TSC County Directors. 8) The termly reports must be accompanied by an extra from the minutes of the M&E Committee (or staff meeting) indicating that they were discussed and evidence availed and 9) The heads will receive feedback on M&E the reports from TSC County Director with a copy to TSC HQs TM Directorate not later than 21 days after receipt of termly performance targets progress reports.

### **Process of Performance Contract**

According to the TSC Corporate Communications Division, (2016) on performance management, the process of preparing and signing a performance contract begins at the end of third term. The Head of Institutions shall; Review achievement of targets for the ending year and carry forward to the following year any targets that have not been achieved; Set targets as per the seven pre-set performance criteria on and Consult the respective TSC County Director and arrange for signing of the performance contract.

### **Monitoring of Performance Contract Targets**

The Commission has provided monitoring and evaluation tools to be used by Heads of institutions these are the monthly, termly and annual evaluation monitoring and evaluation tools as illustrated by the table 1.

The head of the institution is expected to come up with the monthly evaluation targets which eventually translate to the termly targets and finally annually. They will determine how much has been achieved from the signed contract and help the Sub-County Director /County Director to make an informed decision during evaluation together with tangible evidence.

### **Meaning of Performance Appraisal**

Performance appraisal is an integral component of the overall performance management in an organization. The implementation of a credible system must be based on pre-set and established objectives. It has also to be founded on agreed targets at the start of the assessment period (TSC Image, 2017). All teachers under the TSC undergo performance appraisal based on the agreed targets that their principals and head teachers signed for their schools' performance contract.

Previously, the teaching service has been under a closed performance appraisal system where the head of institution assessed the teacher confidentially. This was shrouded in secrecy as the teacher was not involved. In the new more inclusive system, the appraiser negotiates with the appraisee on set targets and is also involved in the evaluation process (TSC Image, 2017)

Teacher performance appraisal is a method of monitoring and evaluating a teacher's performance at the school level which involves; Setting of performance targets; Periodic assessment; Feedback on evaluation; Performance based consultations; Gathering evidence to demonstrate performance; Rating of the performance; Identification of performance gaps and Planning on teacher development and support measures (TSC, 2016).

### **Why performance appraisals for Teachers**

The Performance Appraisal tool for teachers is known as the Teacher Performance Appraisal and Development (TPAD). This is because it encompasses both evaluation of performance and mechanism to address performance gaps. Performance appraisal for teachers is expected to: Provide for a fair, objective and consistent teacher evaluation for making crucial management decisions such as assignment of teachers, deployment and promotion; Provide for fair, effective and consistent teacher evaluation; Give teachers opportunity to improve on their performance competencies and Identify teacher's performance gaps and provide support for professional development.

### **Benefits of Teacher Performance Appraisal**

According to the TSC Image (2017), the benefits of TPAD include; To form the basis for the reward system, including promotion and deployment to position of higher authority such as head of department, deputy headship and headship; The use of performance appraisal will enable TSC to improve performance in every learning institution in line with its vision of being an institution of excellence in the provision of efficient and effective service for quality teaching; The open appraisal system helps promote better understanding of the teacher's role by clarifying duties and responsibilities; It gives a better understanding of personal strengths and weaknesses in relation to expected performance targets; Improves communication and enhance feedback between the teacher and the supervisor thus enhancing interpersonal relationship and Help the teacher internalize the culture, norms and values of the institution.

### **Process of Performance Appraisal**

The process of performance appraisal begins at the end of third term. Regulation 52 of the Code states that the purpose of the open appraisal system for teachers is "to strengthen supervision and continuously monitor performance of teachers in curriculum implementation at the institutional level" The following steps should be followed (TPAD MANUAL, 2016): Develop appraisal calendar at the end of third term and set departmental and individual targets and complete TPAD tool together with Appraiser; Document performance evidence throughout the term including lesson observation to be presented during appraisal; Teacher appraises and rates himself before being appraised by the appraiser; Appraisee and appraiser identify competency areas under each of the standards where the teacher has professional performance gaps and Appraisee and appraiser develop a teacher support and development plan to address performance gaps.

The appraisal report shall be shared between the teacher and the appraiser and countersigning officer or arbitrator (if or when the need arises). The appraisal reports for all teachers will then be shared with the school's Board of Management. The TSC County Director will then analyze the teachers' appraisal reports and submit the summary to the TSC headquarters.

The teachers will be appraised every school term. The termly evaluations will cumulatively constitute the annual appraisal report. Every head of institution shall submit an annual staff appraisal report to the County Director, through the Sub-County Director by every January 10th. Whenever a dispute occurs between the appraisee and the appraiser, a more senior officer other than the two will be asked to arbitrate. The Commission will take disciplinary action against a teacher who fails to complete and submit the

appraisal report to the supervisor or refuses to discuss or sign the report with the supervisor (TPAD Manual, 2016)

### **Rating Scale**

For the TPAD to be effective there are tools that teachers must make use of and these are; 1) Teacher Classroom/Lesson Attendance register which is marked by the class secretary /monitor and surrendered to the Deputy Head. It finally goes to the head of the Institution for filing 2) **Checklist of Teacher Professional Documents**. This tool contains documents which shall be used to assess if every teacher complied with the teaching performance standards. The listed records must be prepared, used, updated and maintained always, it is upon these that the teacher will be rated. The head of the institution must ensure that this check list is marked monthly by the immediate supervisor (TPAD Tool, 2016). It is signed monthly by the appraiser and confirmed at the end of each term by the Head of the Institution. 3)**Checklist of the Documents to be kept by the Head of an Institution**. This tool has documents which shall be used to assess whether the Head of the Institution has embraced institutional based Quality Standard Management (QSM) in maintenance of teaching standards (TPAD Tool, 2016). The Head shall ensure that records listed here are acquired, prepared, used, updated and maintained always, it is upon these that the head will be rated. This check list shall be marked every term by the immediate supervisor. It is checked monthly by the Curriculum Support Officers or Sub-County Directors at the end of the month and TSC County Director/Deputy County Director/Sub-County Director at the end of the term. 4)**Lesson/Classroom Observation for Monitoring and support of TPAD implementation** has been on going by the Curriculum Support Officers, Sub-County Directors, County Directors, Officers from the TSC Headquarters and Commissioners. The field officers have also been carrying out sensitization workshop for Head teachers and Deputy Head teachers. They have been using a TPAD and PC assessment tool at school level as shown hereunder;

The teacher management officers from the field and TSC headquarters came out with several outcomes using the above tools. According to the TSC CIRCULAR NO.12/2017 dated 5<sup>th</sup> June.

### **ACHIEVEMENTS IN IMPLEMENTATION**

The Commission noted the following remarkable achievements: 1)**Compliance status:** Heads of Institution and teachers have fully embraced Performance Contracting (PC) and Teacher Performance Appraisal and Development (TPAD) through signing of PCs and setting appraisal targets, and as a result the performance management tools have been entrenched into the teaching service 2)**Effective time management:** The implementation of



PC and TPAD have considerably reduced teacher absenteeism from school and improved overall lesson attendance by all teachers. This entrenches a culture of client relationship with learners and other stakeholders. This has in turn impacted positively on the quality of teaching through improved syllabus coverage and curriculum delivery. While addressing Principals during their annual conference at the Wild Waters center in Mombasa in June 2015 the Chief Executive Officer of TSC Mrs. Nancy Macharia reiterated that Performance Management has gradually evolved into one of the commission's flagship projects for improving the quality of education

3) **Use of professional documents:** There is commendable improvement in preparation of schemes of work, lesson plans, lesson notes and learning/teaching progress Records and Record of Work are also well maintained. The teachers are now more focused and they are taking more time to prepare. They are spending more time planning for lessons and updating their teaching aids; there is more documentation on learners' progress and it is also evident that more and more teachers are planning for makeup classes.

4) **Safety of Learners:** There is increased sensitivity among teachers on issues pertaining to the safety of learners as demonstrated through teachers' understanding of legal and policy provisions on learners' welfare. Documentation on learners' behaviour and parental involvement in correctional programmes is in place in many schools

5) **Financial management:** There is improved adherence to approved budgets, improved submission of books of accounts for audit and compliance with the Public Procurement and Asset Disposal Act through tendering, evaluation, awarding and disposal procedures is becoming entrenched. This ensures prudent use of financial resources. This is expected to result in more efficiency and economic use of financial and economic use of financial resources teaching and learning programmes in all institutions

6) **Supervision** Heads of institution have stepped up supervision by ensuring maintenance of appraisal records, curriculum audit reports, teacher lesson attendance registers and submission of staffing returns to the Commission. Heads have become more rigorous in supervision because their targets cannot be met without teachers first delivering on their own. This has impacted positively on curriculum delivery in the various schools as they are regularly verifying professional documents for teachers and promoting teamwork

7) **TPAD** is giving teachers an opportunity to gauge their potentials and set targets which are achievable

8) There is promotion of co-curricular activities making the pupils/students realize their talents

9) Learners' progress records are well maintained. There is increased integration of information communication technology in teaching sourcing of appropriate teaching and learning materials from the Internet and through mobile phones and

10) There is evidence that a collaborative culture is developing in schools where teachers involve parents and guardians in the management of learner behaviour.

## Challenges in Implementation of PM

1)The greatest challenge has been understanding the tools and using them effectively. The following are examples where the tools are misunderstood:

At the beginning of every year the Performance Contract is signed between the Heads of Institutions and the Chief Executive Officer through the County Directors. The heads of the institutions should ensure the contract is implemented through targets set in the Monitoring and Evaluation forms - monthly, termly and yearly. For instance, under **FINANCE AND STEWARDSHIP INDICATORS**, achievable targets should be set considering the Weights set and translated to 100%. This should in turn be evaluated at the end of the year by the Supervisor using evidence and the Monitoring and evaluation forms. Some heads of institutions sign the contract and keep the files making evaluation difficult with no concrete evidence.

2)Some Heads of Institutions still don't understand that the Monitoring, checklist of the documents to be kept by the head teacher and Evaluation Forms are tools to help in the implementation of the performance contract while the Lesson observation tool, Lesson attendance register and the teacher's checklist are to ensure that the TPAD is effectively implemented.

3)There are cases where the Heads of Institutions evaluate themselves at the end of the year in the Performance Contract Evaluation Form instead of the supervisor. In such cases they assume that like the TPAD they should rate themselves on the PC evaluation form which is not the case.

4)The PC tool has been predetermined and is uniform for all schools in the Country yet the schools are very different in terms of categories. This makes it very difficult during evaluation.

5)During appraisal, some appraisees and appraisers fail to check on the performance indicators to ascertain that the targets were achieved.

6)Lesson Observation Indicator is a compulsory target yet some Heads of Institutions have the notion that only field officers can observe their lessons. This can be done by Heads of departments.

7)After the observation of a lesson, both the appraisee and appraiser should give their ratings on the observation areas before they agree on the final score but in most cases the appraiser gives ratings on both columns and even on the agreed score.

8)In the TPAD tool the teachers are to indicate lessons attended and not attended. This should only be done after confirming with the Deputy Head teacher who does a weekly summary of the same from the class attendance register signed by the class monitor. Some deputies are also not privy to the fact that the whole summary should be done by them. When this is correctly done then a rescheduling time table for lesson missed can be done.

9)On the page with Appraisee/Appraiser's Remarks, they both tend to write " targets met" when they should make comments on how the appraisal process was conducted.

10)On the Teacher Support and Professional Development planning, the appraisee should be able to identify the gaps which hindered him/her from achieving the set goals while giving the recommended support/activities needed to improve on that gap. Some appraisees leave the space with performance gaps plan but fill the recommended Support space making the whole process meaningless.

11)The Arbitration space should only be signed when both the appraisee and the appraiser fail to agree on the ratings and in the presence of an Arbitrator but most teachers and their appraisers tend to fill it even where there is no disagreement.

## AREAS OF SENSITIZATION

**1)Work plan;** All field officers are expected to prepare a work plan that should include TPAD & PC activities. The work plan should have targets to be achieved, expected outcome and a time frame. It is expected that all schools will be visited during the term. **2)Monitoring schedule;** It is important to prepare a monitoring schedule indicating the school to be visited within a specified period. Such should be maintained as one of the documents to be presented as evidence for offices' appraisal. It should have remarks showing if the schools were visited or not and reason for not visiting.

**3)Monitoring tool;** A monitoring tools should be used to guide the process. This will be used for collecting data, reporting and providing feedback to teachers; 4) Lesson observation and demonstration **5) Evidence based evaluation;** It is expected that all evaluation will be evidence based. It is important for officers to verify the evidence used for appraisal and performance contracting. Officers are expected to visit schools to verify documents and gather evidence to justify the ratings on TPAD & PC: **6) Professional gaps and intervention measures:** Officers are expected to make a summary of the professional performance gaps identified at the zone, Sub County or county levels and propose intervention measures to address these gaps. The measures taken at each level should be documented as well as the improvements from the interventions. Officers should organize workshops and seminars at each level. Encourage head teachers to organize school based measures to address their gaps. They can form clusters and leverage on the strength of excellent teachers: **7) Feedback analysis tool**

Feedback in terms of strengths and areas to improve on should be prepared and given to teacher after monitoring exercise. This should be aimed at improving the weaknesses observed: **8) Reporting:** It's expected that after monitoring exercise, the officers will prepare reports and submit the same to

the sub county, county and TSC Headquarters. The CSO should submit to the Sub County who will submit to the County Director. The county director is expected to compile and submit monthly, termly and annual reports to TSC headquarters **9) Sensitization** From the various monitoring exercises, it was observed that teachers require continuous sensitization on the appraisal process and heads on the PC requirements. This calls for inset programs that will cover areas that teachers and heads have difficulties in conceptualizing. The programme for such activities will be used as evidence for the officers' appraisal.

According to the TSC /ADM/192A/VOL.IX/14 CIRCULAR NO.12/2017 of June 2017 on Evaluation of TPAD and PC the following **Additional Improvement Measures** were proposed; To consolidate the gains realized in the implementation of PCs and TPAD so far, the Commission has put in place measures to ensure field officers are facilitated regarding building capacity, logistics and information communication technology (ICT) infrastructure.

### **Operational Support**

A performance contracting and appraisal Secretariat under the Quality Assurance and Standards Division has been established at the TSC Headquarters to offer operational support.

Responsibilities of County Directors County Directors will be required to: Strengthening monitoring of PC and TPAD by ensuring Heads of Institution sign performance contract based on the seven criteria and teachers are appraised on the seven teaching standards in the TPAD.

- a) Visit all schools in a county and submit returns to the commission headquarters.
- b) Initiate programmes for providing professional support to teachers, CSOs and SCDs in the implementation of PC and TPAD. The programmes may entail addressing performance gaps in the seven teaching standards for teachers.
- c) Ensure timely submission of appraisal data for PCs and TPAD. This should be done through continuous to monitoring and evaluation of the implementation of Process.

### **Recommendations an Effective PM**

- 1)Mirror the corporate culture and values
- 2)Have visible CEO and senior management support
- 3)Focus on the right organizational performance measures that relate to strategy, mission, and goals and cascade company goals down the structure
- 4)Link job descriptions to performance management system and establish accountability
- 5)Differentiate performance fairly and effectively
- 5)Train managers in performance management
- 6)Link

compensation to performance management system – merit increases, actual incentives, long-term incentives, discretionary incentives 7) Communicate the total reward system 8) Require managers to actively search out, offer and acquire performance feedback on a regular basis 9) Set clear expectations for employee development 10) Track effectiveness of the performance management system. Is it able to identify trends in performance differentiation, pay differentiation, performance gaps/developmental needs? Etc. and 11) Adjust the system as required.

## **Conclusion**

This review was conducted to ascertain whether Performance Management system as practiced by TSC has been relevant in the design, implementation, and effectiveness in Kenya, and to suggest changes that might reflect and reinforce contemporary strategic HRM theory. It was expected that the pressures of globalization, increased regional competition, industry rationalization, and a significantly more cooperative industrial relations environment, would have encouraged employers to redesign their performance management systems to reflect their competitive imperatives, and to enable closer links between individual, group, and organizational objectives and outcomes. Overall, the conclusions of the study can best be described as mixed, with evidence that substantial changes have been made with respect to the use, purposes, and nature of performance management systems, and more hopefully, that more customized and integrated systems are proposed for the future. There is need to utilize the balanced scorecard as the bridge between organizational and individual employee goals. This will ensure, the attempt to implement the strategic HRM agenda in organizations through performance management with imperatives to grow in the future. The dissatisfying factors remain to indicate the guiding principles that HRM professionals should use to further develop their performance management systems – alignment, integration, commitment, collaboration, feedback, outcomes, and user-friendliness.

Organizations can use all these approaches together effectively to evaluate the employee performance. This has positive impact on employees' motivation and they tend to improve their performance. They can identify their strengths and weaknesses and work on improving their skillsets. Since the employees are aware of the organizational goals, they can also work on improvising their skills further to achieve them. Employee performance enhances the communication between an employee and the supervisor to discuss job duties and work-related issues for a healthy work environment. With the changing trend, more recent techniques and approaches are being formulated to measure employee productivity and organizational performance which TSC should adopt to improve human capital development. Success or

failure in performance management depends on organizational philosophies, and the attitudes and skills of those responsible for its implementation and administration, together with the acceptance, commitment and ownership of appraisers and appraisees (Hedge and Teachout, 2000).

We therefore propose a study which explores the strategic elements of systems, and the application of the balanced scorecard framework to performance management. This begins by assessing the frequency of usage of organizational vision/mission statements; articulates organizational values; critical success factors; and the balanced scorecard; and proceeds to examine the relationships between plans, missions, measures, and reviews associated with the BSC. The specific choice of the BSC will be due to its explicit and structured inclusion of performance measures with key organizational objectives and strategies.

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## Comparison of Item Difficulty Levels Obtained As Per Two Different Methods

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doi: 10.19044/ejes.v4no3a4 [URL:http://dx.doi.org/10.19044/ejes.v4no3a4](http://dx.doi.org/10.19044/ejes.v4no3a4)

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### Abstract

In this study, a multiple choice test which is composed of 19 articles which is prepared as per the scope of lesson of Measurement and Evaluation in Education, has been applied as interim exam to 207 teacher candidates who are getting education at the Faculty of Education. The difficulty levels of items which are in the test have been calculated as per Classic Test Theory. The difficulty levels of the same questions as being perceived by teacher candidates are calculated as per Classification judgment which is one of the Scaling methods and it was aimed to determine whether the difficulty levels obtained as being based on both two methods differentiated or not. Again on the other hand, it was also determined whether there is a relation at a meaningful level between item difficulty levels being obtained as per both two methods and the direction and level of the relationship if it existed. While it was reached to the finding that item difficulty levels obtained as per both two methods differentiated even if a little, in order to determine if there is a relation between item difficulty levels obtained as per both two methods, correlation technique of Pearson and Spearman is used. Coefficient values relating with item difficulty levels obtained as per both two correlation techniques came out to be the same, while the correlation coefficient ( $r = 0,73$ ) between item difficulty levels obtained as per Classic test theory (CTT) and item difficulty levels perceived as per Classification judgments was found to be meaningful at a high level. This reveals that both two methods produced similar results with respect to item difficulty levels.

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**Keywords:** *Classic Test Theory, Scaling as per Classification Judgment, item difficulty level*

### 1.Introduction

It is required to conduct a measurement process aiming to determine whether the education received by the students attending the education programs have gained the foreseen features or not as relating with students being part of the system regardless of their levels. Since the features deter-



mined to be measures are abstract, it becomes inevitable to use indirect measurement.

In order to realize indirect measurement process, there is a requirement to have a measurement tool. Measurement processes relating with behavioral sciences require for a more meticulous study to be conducted when compared with physical measurements, as the features to be measures and the tools to be used for the measurement process are considered (Kan, 2008).

When academic success test is developed with the aim to determine the academic success of students at school (level of learning or the attained behaviors) and as the statistics of the test and the items in the test are figured out, Classic test theory (CTT) is being used. In the measurement of success, the score as per CTT, the total of scores obtained by student according to the correct answers he have to the questions in the test, reflects his success.

Test and item statistics are calculated as being based on these scores which are attained. Therefore, total of scores obtained by students as per CTT, show variations according to the difficulty level of items in the test.

Furthermore, the basic advantage of CTT is that it has got weak theoretical assumptions facilitating its being applied to many test situations (Hambleton and Jones, 1993; akt. Kan, 2006).

Due to the reason that it is easy to determine the parameters as the test is applied, applications which are based on CTT are much preferred (Kelecioğlu, 2001; Kan, 2006). In developing a test as depending on its CTT, item difficulty index ( $P_i$ ) and item differentiation index are important. By using the statistics for these two items, it is being possible to estimate the features regarding the test. (Doğan, Tezbaşaran,2003; Kan,2006).

It is a known fact that the item difficulty index has the strength to influence the reliability level of the test. If the item difficulty index is very big (easiness of item) or very small (difficulty of item), this situation causes for item variances ( $S_j^2 = pq$ ) to be small. The case where item variances ( $S_j^2 = pq$ ) are small causes both for test reliability and item differentiation index ( $r_{jx}$ ) to come out as small. Naturally, as reliability is the precondition for validity, this situation also has the power to influence the validity of the test. Item difficulty index ( $P_i$ ) has influence on academic performances of students as their academic successes are measured. Especially decisions in forming certain strategies are taken about whether students who don't have sufficient level of academic success will answer to the test by looking at the difficulty levels of items in the test or not. According to Upshur (1971), measurement is an important part of education as it constantly provides information relating with the learning of students.

Furthermore, as per the researches previously conducted it is known that student-student interaction (Cardoso, Ferreira, Abrantes, Seabra, & Costa,

2011); success motivation, attitudes toward learning, impact of peers in learning, ethnic and gender (Abu Bakar, Ahmad Tarmizi, Mahyuddin, Elias, Wong & Mohd Ayub, 2010); education method, evaluation methods (Lebcir, Wells, & Bond, 2008); academic and general sense of self (Pullmann & Allik, 2008); intelligence and personality (Laidra, Pullmann, & Allik, 2007); exhaustion of students (Yang, 2004); peer success (Hanushek, Kain, Markman, & Rivkin, 2003); difficulty of test being perceived (Weber & Bizer, 2006; Hong, 1999) are influential on the learning performances of students.

The particulars being mentioned here also have an impact on academic success besides their influence on learning. Especially the difficulty levels tests or the items in the test being perceived, has an influence on test performance during measurement and therefore this impact is reflected on academic success. Because difficulty levels of items in the test as perceived by students, who are made subject to measurement process cause them to get worried during the exam. On the other hand, it is a known fact that there is a linear correlation between the worry felt during the exam and the academic success. Hong (1999) specifies in his research that the test difficulty (and the item at the same time) perceived during the test causes directly for the student to feel worried.

The difficulty levels perceived by students attending the exam as relating with the questions in the test, also causes them to feel worried about the exam besides causing them to feel worried as emotionally. Here the situation which brings a student to the level of worrying is the difficulty level forming in the mind of students cognitively. As per the research they conducted on 62 psychology undergraduate students, Weber and Bizer (2006) have stated that students' being informed about the difficulty of test before the application of test created a mixed impact on their performances such that it could improve or lower their performances.

However, in some of the researches made, it is being reported that there is no meaningful difference between the difficulty level of questions in a test and the academic performance of students (Laffitte, 1984; Monk & Stallings, 1970; Skinner, 1999) and even if it is stated that correction would be made for luck chance, still there was no meaningful differences between the academic success of students and the difficulty level of test items (Di- Battista, Gosse, Sinnige-Egger, Candale, & Sargeson, 2009). On the other hand, in a meta-analysis study comprising test item order as based on difficulty level, it is reported that students showed a better performance in tests starting with simply questions when compared with those starting with difficult questions or starting in a random order (Aamodt & McShane, 1992).

In psychometrics science area, in order to measure features such as success, attitude, intelligence, interest, motive, and motivation, it is needed to develop or scale measurement tools which are appropriate for the features to

be measured. Scaling pursues the goal to reveal the methods for the transition from empirical relations to formal relations (Turgut and Baykul, 1992; Anil and Güler, 2006). At the same time, Anil and Güler (2006) consider scaling during the measurement process as an important ring between the passage from observations showing the qualitative differentiations and quantitative differentiations.

Scaling is analysed in two groups which are “approaches being based on trial responses and judgment decisions”. The approach which is based on trial responses are centered on the respondents and it aims at the scaling of answers instead of items or stimulants (Torgerson, 1958; Turgut and Baykul; 1992; Kan, 2008; Bal, 2011). This approach focuses on placing the individuals at a different place on the scale as being based on the responses they give to the items (Crocker and Algina, 1986).

Scale development by using Likert method is one of the most well known examples of approaches based on trial responses (Tezbaşaran, 1996). These scales are the ones which are most frequently used in measuring certain features and especially attitudes in behavioral sciences (Turgut and Baykul, 1992).

The approach which is based on the decisions of adjudicator consists of scaling the stimulants as per the judgment of specialist or experts on a certain dimension and the degree of stimulation caused by each stimulant is determined with a specific method. (Ranking, classification, double comparison etc) (Stevens, 1946, cited by; Bal, 2011; Kan, 2008). Scaling approach with classification judgments is based on a statistical model aiming to determine the relations between interval limits and scaling values of stimulants in cases where the stimulants are classified in consecutive intervals. In order for gathering the judgments based on classification decisions, all of the stimulants in k number are given and it is requested for it to be defined to which class each stimulant coincides with, among those classes that were priorly ranked and defined. Afterwards, as being based on judgments of observers, the scale values of stimulants are determined (Kan, 2008).

A study which compares the item difficulty levels perceived as being based on classification judgment, which is one of the scaling methods, and as per CTT of items instead of the ranking of test items within the test as having impact on the success of students, could not be specified by the researcher. This study is one which aims to compare the item difficulty levels perceived as being based on its CTT and the classification judgments, which is one of the scaling methods.

In line with this objective, it is searched to find answers to the following questions.

1-When the type of question booklet which the teacher candidates answered during the interim exam being aimed for success test for the

measurement and evaluation lesson in education is considered, are there any variations between item difficulty levels perceived as being obtained according to Classical Test Theory and those obtained as per classification judgments?

2-When the types of education applied to teacher candidates as being aimed for the achievement test for the measurement and evaluation lesson in education is considered, are there any variations between item difficulty levels calculated according to Classic Test Theory and those perceived as per Classification judgments?

3-Is there a meaningful relationship between item difficulty levels calculated according to Classical Test Theory and those perceived as per Classification judgments as being aimed for achievement test regarding measurement and evaluation lesson in education?

## **Research Model**

### **Method**

In this study both fundamental research and descriptive research model have been used. Fundamental researches are those researches which add new informations to the existing theoretical informations (Kaya and Gelbal, 2007). In fundamental researches, generalization of findings obtained from the sample to the universe is not required. When it is viewed from this perspective, the study on hand can be considered as a fundamental study. Descriptive researches are those researches aiming to explain the relations between variables by considering the previous situations (Kaya and Gelbal, 2007).

Descriptive researches are generally based on survey methods. While survey methods are used to reveal the descriptive features in quantitative researches, by using the measurement tool suitable for the features being the subject of measurement, data collections are realized.

### **Study Group**

The study group is composed of 207 teacher candidates getting education in 3rd class of Faculty of Education at Pamukkale University and taking the course of Measurement and Evaluation in Education within Spring Season of 2015-2016 academic period.

### **Measurement Tool**

As data collection tool, an academic achievement test which was composed of 19 multiple choice questions as relating with the lesson of Measurement and Evaluation in Education and being developed with the aim to be applied in interim exam of students taking the course of Measurement and Evaluation in Education as being obligatory in the Faculty of Education is used.

Ranking could be provided by asking those answering the questions in items within the test, to put a number for ranking the difficulty level of item as being perceived inside a circle placed in front of the related item. They have made classification by ranking the items from the most difficulty one with number 1 to the easiest item by ranking with number 5.

### Analysis of the Data

In the analysis of data obtained, scaling technique being based on its CTT and the classification judgments is used. In the analysis of data obtained from test being composed of 19 multi choice items that is developed and applied within the scope of Measurement and Evaluation course for interim exam, to which teacher candidates making up the research sample participated in during the period, item difficulty index ( $P_i$ ) as per relevant CTT has been used.

The value regarding item difficulty index ( $P_i$ ) as per its CTT, is expressed as the ratio of those answering correctly to any one item in the test to the number of those taking the exam and it is calculated as given below.

$$P = \frac{\sum x_d}{n} \quad (1)$$

$P_i$  = Item difficulty level

$\sum x_d$  = the number of those answering correctly to the item

$n$  = total number of those taking the exam

In the scaling method according to the classification judgments, it is asked to those answering the questions to rank the difficulty levels perceived by giving a number between 1 and 5. Test items are answered by giving a number from the most difficult (1) to the easiest one (5). As relating with scaling study with classification judgments, first of all frequency and stacked frequency matrices have been formed as relating with classification judgments obtained from adjudicators and then, stacked ratio matrix has been established from stacked frequency matrix. After this stage, by calculating unit normal deviations corresponding to each stacked ratio by using excel program, matrix for unit normal deviations ( $Z$ ) is formed and with this matrix and  $D$  form, scaling process was carried out from full data matrix. By taking the averages of this matrix by columns, limit values for classes are estimated. Afterwards, general average of matrix is calculated and by subtracting the line averages from this average, scale values of stimulants (items) is predicted.

### Findings and Results

In order to answer to the first sub-problem of the research, first of all item difficulty level per its CTT was calculated. As being based on

classification judgments method, in order to calculate the difficulty levels of 19 multi choice items as being perceived by answerers, first of all frequency ( $F$ ) matrix has been formed with the aim to determine number of times a test item is placed in a class by students as being the adjudicators. In the following step, by adding the line elements of  $F$  matrix, stacked frequencies matrix is formed and by dividing frequency values in each cell of columns of matrix to the number of adjudicators, ( $P$ ) matrix has been obtained. Unit normal deviations corresponding to each one element on the ratio matrix are calculated with the help of excel package program and matrix of unit normal deviations ( $Z$ ) is formed. With regards to the unit normal deviations matrix, first of all line averages ( $Z_r$ ) and column averages of the matrix ( $t_s$ ) have been calculated. Column totals form the upper limit values of classes. By dividing the upper values of relevant class to the number of classes, general average of the matrix is obtained. In the next stage, by taking the difference of line averages of matrix ( $Z_r$ ) from general averages of matrix ( $\bar{Z}$ ) scale value for each test item is obtained. The smallest value of test items is taken as starting point (0.00) and by adding the absolute value of this smallest value to the scale values of other items, new scale values as being the starting point (0.00) have been obtained. Statistics regarding the difficulty levels perceived relating with items calculated as being based on classification judgments for 19 multi choice items being part of measurement tool, are presented in table 1.

For the consistency of scale values for the difficulty levels perceived regarding the items calculated as being based on classification judgments, A.D value is calculated as 0,066. It is tested whether the model established as per the observation outcomes specified in accordance, comply with the empirical data or not. The differences between the theoretical data obtained from the model by going from the last to the beginning processes and the empirical data are compared (Kan, 2008). A.D. Data which are obtained as considered as the measure of consistency between theoretical data and empirical data. If the A.D. coefficient (value) which is obtained is small, it is considered as the consistency of indicator and if A.D. Coefficient is big, it is seen as the indicator of inconsistency of scale values. In this study, A.D. Coefficient for the classification judgments is significantly low, which shows that scale values of difficulty levels perceived for the items as being based on classification judgments are reliable.

When table 1 is investigated, while the most difficult item which is perceived as per classification judgments is the item with number 17, statistically item with number 17 has been the fourth most difficult item as per its CTT:

Again, as per item difficulty level calculated according to its CTT, the most difficult item was 8th item, whereas this item has been seen as the fifth most difficult item as per the difficulty level perceived according to classification judgments. On the other hand, the most simple item, meaning the item with less difficulty level for the answerers has been the 16th item. According to both of the methods, the answerers considered the item with number 2 as the second most difficult item. The question asked in the second sub-problem of research is related with whether the item difficulty levels obtained as per both methods differentiated or not when the type of education which the teacher candidates took was considered.

**Table 1**  
*Item difficulty levels calculated as per classification judgments and classical test theory for questions asked in interim exam for Measurement and Evaluation course*

ITEM NO	Item difficulty level perceived as per classification judgments					Item difficulty level perceived as per classical test theory								
	$Z_j$	$S_j$	$S_c$	Ranking of difficulty perceived (Scale value)	Ranking of difficulty perceived (Scale value)	Normal Education	Secondary Education	Form A	Form B	Interim exam	Normal Education	Secondary Education	Form A	Form B
1	-0,613	0,54	1,5	1,94	1,5	1,3	1,9	1,4	1,5	1,4	0,8	0,5	1,6	1,6
2	-1,144	0,875	2,1	2,47	1,8	2,8	2,12	2,8	2,47	1,8	0,9	0,8	0,99	0,8
3	-0,433	0,164	1,2	1,46	1,0	1,4	1,41	1,2	1,39	6,66	9,2	9,6	0,75	0,3
4	-0,188	0,108	1,1	1,34	1,3	1,3	1,16	1,8	1,50	1,0	0,4	0,3	0,47	0,53
5	-0,774	0,506	1,7	2,03	1,6	1,7	1,75	2,7	1,16	1,7	0,7	0,5	0,76	0,7

6	0,	-	0,	4	1,	5	0	4	0,	4	1,	5	0,	7	0	7	0	7	0,	7	0,	5
	16	0,	8		08		,		81		24		50		,		,		55		46	
	4	43	1		9		,		9		6		7		5		3		3		6	
		3	6				3						0		0		8					
7	0,	-	0,	2	0,	2	0	3	0,	2	1,	3	0,	2	0	2	0	1	0,	1	0,	2
	31	0,	6		98		,		66		10		23		,		,		20		27	
	6	58	6		3		8		4		0		7		2		1		4		2	
		5	4				9								9		2					
8	0,	-	0,	5	1,	3	0	5	0,	5	1,	2	0,	1	0	1	0	2	0,	3	0,	1
	05	0,	9		07		,		93		05		20		,		,		26		14	
	0	31	3		9		9		1		8		3		1		1		2		6	
		8	1				4								6		5					
9	0,	-	0,	6	1,	6	1	6	0,	6	1,	9	0,	5	0	3	0	5	0,	2	0,	7
	01	0,	9		30		,		96		45		38		3		3		23		54	
	3	28	6		1		1		7		6		6		0		3		3		4	
		2	7				2								0		3					
1	-	-	1,	9	1,	9	1	7	1,	9	1,	7	0,	3	0	4	0	3	0,	5	0,	3
0	0,	0,	1		42		,		18		44		30		,		,		33		29	
	20	06	8		7		2		7		6		9		3		2		0		1	
	6	2	7				0								3		0					
1	-	0,	1,	1	1,	1	1	1	1,	1	1,	1	0,	1	0	1	0	1	0,	1	0,	1
1	0,	17	4	3	65	3	,	4	42	3	64	2	74	3	,	0	,	7	76	4	73	3
	44	5	2		7		4		4		8		9		7		5		7		8	
	3		4				8								0		8					
1	-	-	1,	7	1,	7	1	9	1,	7	1,	8	0,	1	0	1	0	1	0,	1	0,	1
2	0,	0,	0		30		,		02		45		75		4		5		3	74	2	75
	04	22	2		8		3		9		1		0		7		5		8		7	
	8	0	9				1								8		0					
1	-	0,	1,	1	1,	1	1	1	1,	1	1,	1	0,	1	0	1	0	1	0,	1	0,	1
3	0,	12	3	1	53	1	,	2	37	1	58	1	80	7	,	6	,	6	84	7	76	5
	39	1	7		9		4		0		0		2		8		5		5		7	
	0		0				7								0		8					
1	-	0,	1,	1	1,	1	1	1	1,	1	1,	1	0,	1	0	1	0	1	0,	1	0,	1
4	0,	18	4	4	63	2	,	5	43	4	73	3	70	1	,	1	,	2	70	0	69	0
	45	4	3		1		6		3		6		0		7		4		9		9	
	2		3				5								1		9					
1	0,	-	0,	3	1,	4	0	2	0,	3	1,	4	0,	1	0	1	0	1	0,	1	0,	1
5	28	0,	6		08		,		69		12		71		2		4		1	72	1	70
	9	55	9		5		7		1		3		5		7		4		8		9	
		8	1				9								7		6					
1	-	0,	2,	1	2,	1	2	1	2,	1	2,	1	0,	1	0	1	0	1	0,	1	0,	1
6	1,	88	1	9	53	9	,	9	13	9	49	9	96	9	,	8	,	9	99	9	95	9
	15	2	3		9		1		1		8		6		9		6		1		1	
	1		1				2								6		9					
1	0,	-	0,	1	0,	1	0	1	0,	1	0,	1	0,	4	0	5	0	4	0,	4	0,	4
7	98	1,	0		00		,		00		00		34		,		,		32		37	
	0	24	0		0		0		0		0		8		3		2		0		9	
		9	0				0								4		6					
1	-	0,	1,	1	2,	1	1	1	1,	1	2,	1	0,	1	0	1	0	9	0,	9	0,	1
8	0,	42	6	6	21	7	,	6	67	6	10	6	68	0	,	2	,		66		71	1
	69	2	7		4		6		1		3		1		7		4		0		0	
	1		1				6								4		3					
1	-	0,	1,	1	1,	1	1	1	1,	1	1,	1	0,	8	0	8	0	8	0,	8	0,	9
9	0,	11	3	0	67	4	,	3	36	0	79	5	60		,	,		57		64		
	38	3	6		2		4		2		1		4		6		4		3		1	
	1		2				8								4		0					

As per the finding regarding this sub-problem and as it is seen in table 1, item with number 17 has been the most difficult item both for teacher candidates having secondary education and for teacher candidates having normal education with regards to item difficulty level perceived as being based on classification judgments. On the other hand, as per its CTT item with number 17 has been seen as the most difficult fifth item for the teacher candidates having their normal education.



For the teacher candidates having secondary education program, the most difficult item was the fourth one. As per its CTT, for the teacher candidates having normal education, while the most difficult item was the 8th one, for teacher candidates having secondary education, the most difficult item was the second one. Furthermore, with regards to item difficulty level perceived as being based on classification judgments for item with number 8, for teacher candidates having normal education, the most difficult item was the third one, whereas for the teacher candidates having secondary education, the most difficult item was the fifth one.

The item having common features with regards to item difficulty levels based on both its CTT and classification judgments, has been considered to be more difficult by the teacher candidates having normal education than the teacher candidates having secondary education.

With the aim to find an answer to the third sub-problem of research, in the success test prepared within the scope of Measurement and Evaluation lesson in education, for finding an answer to the question of *“Is there a relation between item difficulty levels obtained from the calculation as per classical test theory and as per classification judgments, at a meaningful level?”*, as part of 19 multi choice items, first of all the answers given by teacher candidates to test items are considered and as item difficulty levels are calculated as per its CTT and classification judgments, to be able to determine whether there is a meaningful relation between item difficulty levels obtained as per both of the methods, by using Pearson Moments Multiplication and Spearman’s rho correlation technique, their levels of relationship were determined.

As the correlation coefficients obtained as per both correlation techniques were found out to be the same, only the coefficients of Spearman’s rho correlation are given in table 2.

As table 2 containing the findings obtained as relating with third sub-problem of research is investigated, within the scope of lesson named as Measurement and Evaluation in education, as per 19 multi choice items asked in the interim exam and as regards to item difficulty levels perceived according to its KKT and classification judgments, correlation coefficients obtained as per Pearson and Spearman’s rho correlation technique are calculated as being equal.

The smallest correlation coefficient ( $r=,67$ ) was obtained between teacher candidates getting normal education as per CTTs and teacher candidates participating in interim exam. Smallest correlation coefficient ( $r=0,71$ ) for item difficulty levels perceived as per classification judgments, was found to be between item difficulty levels of teacher candidates getting normal education and teacher candidates answering form A in interim exam. If the correlation coefficient specified as per Pearson and Spearman’s rho

technique between item difficulty levels perceived as being based on CTTs and classification judgments is small, this reveals that there were big changes in the ranking of item difficulty levels being calculated as per both two methods.

Table 2:

*Statistics regarding Pearson and Spearman’s rho correlation coefficients for difficulty levels as per classification judgments of academic success test items of measurement and evaluation lesson in education and for item difficulty levels calculated as per classical test theory.*

		Spearman’s rho correlation									
		Interim exam for classification judgments					Interim exam for classical test theory				
		AS AG	AS NÖ	AS İÖ	AS AF	AS BF	AS AG	AS NÖ	AS İÖ	AS AF	AS BF
ASA G	Correlation Coefficient	1,00	,73*	,97*	,95*	1,00	,91*	,68*	,75*	,77*	,76**
	Sig. (2-tailed)		,00	,00	,00	,00	,00	,00	,00	,00	,00
ASN Ö	Correlation Coefficient		1,00	,74*	,71*	,73*	,73*	,97*	,97*	,96*	,98**
	Sig. (2-tailed)			,00	,00	,00	,00	,00	,00	,00	,00
ASİ Ö	Correlation Coefficient			1,00	,94*	,97*	,96*	,70*	,75*	,75*	,77**
	Sig. (2-tailed)				,00	,00	,00	,00	,00	,00	,00
ASA F	Correlation Coefficient				1,00	,95*	,92*	,64*	,75*	,73*	,74**
	Sig. (2-tailed)					,00	,00	,03	,00	,00	,00
ASB F	Correlation Coefficient					1,00	,91*	,68*	,75*	,77*	,76**
	Sig. (2-tailed)						,00	,01	,00	,00	,00
ASA G	Correlation Coefficient						1,00	,67*	,73*	,68*	,78**
	Sig. (2-tailed)							,01	,00	,00	,00
ASN Ö	Correlation Coefficient							1,00	,91*	,93*	,94**
	Sig. (2-tailed)								,00	,00	,00
ASİ Ö	Correlation Coefficient								1,00	,96*	,95**
	Sig. (2-tailed)									,00	,000
ASA F	Correlation Coefficient									1,00	,92**
	Sig. (2-tailed)										,00

**\*\*Correlation is significant at the 0.01 level (2-tailed).**

ASAG: General interim exam; ASNO: Normal education interim exam, ASIO: Secondary education interim exam ASAF: A form for interim exam, ASBF: B form for interim exam

On the other hand, if the determined correlation coefficient is found to be high, it is seen that there were few changes in the ranking of item difficulty levels calculated as per both of the methods. When correlation coefficients obtained from both correlation techniques are reviewed, it is observed that there is a meaningful relation in positive direction between item difficulty levels

calculated as per CTT's and item difficulty levels perceived as per classification judgments.

### **Conclusion and Discussion**

In this study, a success test being composed of 19 multi choice items, being prepared as based on the scope of Measurement and Evaluation in Education which is an obligatory lesson in the Faculties of education, has been applied as interim exam to 207 teacher candidates and by considering the answers given to the questions by teacher candidates and by using the measurement results obtained, item difficulty levels perceived as being based on CTTs and classification judgments are calculated. Item difficulty levels obtained as per both two methods are compared

The aim in this study is to determine whether item difficulty levels calculated as per two methods are similar or not and if there is a relation between the difficulty levels or not and whether the existing relationship is meaningful or not. When item difficulty levels calculated as per CTTs are reviewed, it is seen that the most difficult item is the 16th item ( $p=0,203$ ) and it is seen that the most difficult item perceived as being based on classification judgments is the 17th article ( $Sc=0,00$ ). When this question is considered, there is a differentiation observed between item difficulty level calculated as per two methods and the item difficulty level perceived. However scale values for 7th item in the test ( $P=0,237$ ) are calculated ( $Sc=0,664$ ) both with regards to item difficulty level according to its CTT and as per the difficulty level perceived according to classification judgment and it is seen as the most difficult second item according to both of the methods. With respect to 7th item, no differentiation is observed as relating with difficulty levels according to both of the methods. When 19th item in the test is considered as a whole, in order to determine whether there is a statistically meaningful relationship between item difficulty levels obtained as per the two methods, two different correlation techniques were used. (Pearson and Spearman's rho)

While statistics for correlation coefficients obtained as being based on both correlation techniques were found to be the same, correlation coefficients were calculated ( $r=0,733$ ) as per item difficulty levels according to CTTs and item difficulty levels perceived as being based on classification judgments. This correlation coefficient is accepted as a high correlation coefficient. It can be stated that item difficulty indices predicted as per both methods were similar meaning that similar outcomes were produced. Although there is a meaningful relation between item difficulty levels calculated as per two methods ( $r=0,733$ ), since correlation coefficient calculated between item difficulty levels as obtained according to two methods is not 1.00, with regards to the challenges relating with item difficulty levels perceived as per

CTTs and classification judgments, it is possible to think that there is a differentiation in their relevant ranking.

Reason for this differentiation in the ranking of item difficulty levels is related with the distribution of test items in the test. When the questions in a test are ranked from the simple ones to the difficult ones and when they are randomly placed, this situation causes for higher test scores to be achieved when compared with tests in which questions are ranked from the difficult ones to the simple ones (MacNichol, 1960). Changing the place of items in the test has an impact on the item difficulty levels and it is seen in this study that this would cause item difficulty levels to be differentiated (as can be seen in table 1).

This would at least differentiate the item difficulty perceived as it is seen in this study. On the other hand, Breener (1964) has considered item difficulty levels in a test and he stated that there was no meaningful difference between test performances with regards to ranking of items from the difficult to the simple ones, from the simple to the difficult ones or as being placed randomly.

Similarly in the study Lafittee (1984) conducted with regards to the test scores and difficulty levels perceived as relating with different distribution of items, he has stated that there was no influence at a meaningful level on test performances with regards to different ranking of test items and difficulty levels being perceived. As a conclusion, it is believed that item difficulty levels perceived as being based on relevant CTTs and classification judgments, which is one of the scaling methods, shall contribute to the literature.

Furthermore, as relating with correlation coefficient ( $r=0,733$ ) between item difficulty levels calculated as per both methods, test (items) could be developed as making use of the difficulty levels of test items perceived as being based on classification judgments in cases where pre-application conditions may not be convenient for specifying the item statistics in developing a test. By using this method, more reliable item pools could be established.

Researches who would like to conduct similar studies, can realize studies comprising comparisons of item statistics being based on CTTs and ranking judgments as being one of the scaling methods.

### **Acknowledgement:**

This study has been presented as verbal notification at “Cyprus International Conference on Educational Research 2017” and it has been supported by Pamukkale University Scientific Research Division (BAP).

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# **The Impact of Self-Esteem, Academic Self-Efficacy and Perceived Stress on Academic Performance: A Cross-Sectional Study of Saudi Psychology Students**

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doi: 10.19044/ejes.v4no3a5 [URL:http://dx.doi.org/10.19044/ejes.v4no3a5](http://dx.doi.org/10.19044/ejes.v4no3a5)

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**Abstract**

Self-esteem, academic self-efficacy, perceived stress, and preferred learning styles have been linked to academic performance. Investigation of the relationships between these variables has mainly occurred with medical and dental tertiary students in Saudi Arabia, but no previous study has focused on psychology students. The main purpose of the current study was to assess stress levels and preferred learning styles, and examine the relationships between self-esteem, academic self-efficacy, perceived stress, and academic performance among a cohort of psychology students in Saudi Arabia. Participants were 214 psychology students from Taif University and King Abdulaziz University, who completed online measures including the VARK, the Perceived Stress Scale (PSS), the Academic Self-Efficacy (ASE), and the Rosenberg Self-Esteem Scale (RSES). Prevalence of stress was overwhelming, with 71% being highly stressed ( $PSS \geq 27-40$ ). Most of the sample preferred a multimodal learning style. Furthermore, low yet significant correlations between academic performance and academic self-efficacy,  $r_s(212) = .188$ ,  $p = .003$ , and self-esteem,  $r_s(212) = .121$ ,  $p = .039$ , were identified. However, academic performance was not correlated with perceived stress levels.

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**Keywords:** Self-esteem; self-efficacy; stress; academic performance.

**Introduction**

Understanding the effects of psychological factors on academic performance is of great importance and the literature has extensively investigated the role of self-esteem (Cardoso, Ferreira, Abrantes, Seabra, & Costa, 2011; Rosli et al., 2012), self-efficacy (Cayubit, 2014; Khan, Cansever, Avsar, & Acemoglu, 2013), stress (Hamdan-Mansour & Dawani, 2008; Zajacova, Lynch, & Espenshade, 2005), and preferred learning styles (Abdallah, Al-zalabani, & Alqabshawi, 2013; Almigbal, 2015).

Self-esteem and self-efficacy, although related, are separate constructs. While self-esteem is defined as “a favorable or unfavorable attitude toward the self” (Rosenberg, 1965), self-efficacy is related to the person’s confidence in performing a specific task (Bandura, 1977). In the learning domain, both concepts have been linked to academic performance (Fathi-Ashtiani, Ejei, Khodapanahi, & Tarkhorani, 2007; Pullmann & Allik, 2008; Turner, Chandler, & Heffer, 2009; T. Williams & Williams, 2010). In the United Arab Emirates, Afari and colleagues (2012) examined the relationship between self-esteem and academic performance in 225 college students and found a significant positive correlation, suggesting high self-esteem is associated with high academic achievement. Also, the links between academic self-efficacy



and academic performance are well established (Al-Harthy & Was, 2013; Khan, 2013; Turner et al., 2009; Williams & Williams, 2010), and this research affirms that high levels of self-efficacy are related to higher levels of academic achievement.

There is considerable evidence that shows that high levels of stress results in undesirable outcomes, including poor memory and concentration, which lead to ineffective learning and poor academic performance (Aboalshamat, Hou, & Strodl, 2015; Goff, 2011; Hamdan-Mansour & Dawani, 2008). High levels of stress are also associated with reduced self-esteem among college students (Edwards, Burnard, Bennett, & Hebden, 2010). Another educational domain that has been proposed to potentially influence learning is student learning style. Learning styles are defined as “the composite of cognitive, affective, and psychological factors that serve as relatively stable indicators of how a learner perceive, interacts with, and responds to the learning environment” (Keefe, 1989). It has been argued that matching teaching methods with students’ preferred learning styles can facilitate learning (Keefe, 1989; Sadler-Smith & Smith, 2004). However, there is evidence that contradicts this claim (Rohrer & Pashler, 2012; Urval et al., 2014; Zacharis, 2011).

There is a well-established theoretical framework that can be used to establish hypothesized relationships between self-esteem, self-efficacy, stress, and academic performance. Bandura’s Social Cognitive Theory (Bandura, 1991) suggests that personal, environmental, and behavioral factors have a continuous mutual influence over each other, which is termed triadic reciprocity (Bandura, 1991). In reference to the Social Cognitive Theory, Schunk (1999) explained that personal variables may include attributions and self-efficacy, among others. According to Bandura’s model, environmental variables refer to social influences such as feedback and instructions from external sources. In addition, behavioral variables refer to the achievement outcomes such as learning, motivation, and performance. In the present study, self-esteem and self-efficacy represent personal variables, learning styles and stress represent environmental factors, and academic performance represents behavioral variables.

In Saudi Arabia, only a few studies have examined the impact of the aforementioned variables on academic achievement. For example, researchers have examined the relationship between stress and academic performance in dental (Al-Sowygh, 2013) and medical (Abdulghani, AlKanhah, Mahmoud, Ponnampuruma, & Alfaris, 2011) students at King Saud University, the largest university in Saudi Arabia. Other researchers have investigated the impact of self-esteem (among other psychological variables such as achievement motivation and satisfaction with life) on academic performance among health sciences students (Hamaideh & Hamdan-Mansour, 2014).

To the best of our knowledge, there are no previous studies investigating the relationships between self-esteem, academic self-efficacy, stress and academic performance among psychology students in Saudi Arabia. Therefore, this study is aimed at (a) measuring stress levels, self-efficacy, self-esteem, and assessing preferred learning styles and (b) examining the effects of these psychological variables on academic performance among psychology students in Saudi Arabia.

## **Methods:**

### **Study design and participants**

A correlational cross-sectional study design was employed. The target population was exclusively male psychology students in two universities: Taif University (n= 100) and King Abdulaziz University (n= 190). Convenience sampling was employed.

### **Study setting**

Taif University, located in the city of Taif in the Southwest Province of Saudi Arabia, was established in 2003. The Department of Psychology offers a 4-year Bachelor program in industrial/organizational psychology, health psychology, and educational psychology. It also offers a Master degree in educational psychology. King Abdulaziz University, situated in Jeddah, was established in 1967. The Department of Psychology also offers a 4-year Bachelor degree, mainly in general psychology, while the Masters programs are in criminal psychology and counseling psychology. Both universities have separate campuses for males and females. The language of instruction is Arabic.

### **Procedure**

Ethics approval was obtained from both institutions. One researcher from each university introduced the study and its objectives to psychology students during classes and announced invitations. All psychology students at both universities received an invitation email sent through student portals, containing a URL link to the study details and its questionnaire. The study was conducted via SurveyMonkey to ensure anonymity and easy access. In addition, a participant information sheet was included. It explained the study objectives and procedure, and participants' rights (voluntary participation, the right to withdraw at any stage). Data were collected in April 2016 (towards the end of the second academic term). On average, participants took about 20 minutes to complete the questionnaires. Study participants received no course credit nor any other form of compensation for their participation.

## **Measures**

### **Demographic information**

Information on participants' age, gender, marital status, level of study, year of study, and Grade Point Average (GPA) was obtained through demographic questions.

### **Academic performance**

Academic performance was measured by a five-point GPA system. Participants' were asked to report their GPA. This was the obtained GPA over all courses during the same semester in which the survey was administered.

### **The Rosenberg Self-Esteem Scale**

The Arabic version of the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965), a widely used self-reported scale assessed participants' global self-esteem. The RSES consists of 10 items and is scored on a 4 point Likert scale ranging from 1= strongly agree to 4= strongly disagree. The scale contains 5 negative items, which must be reversed before calculating the total score. Total score ranges from 0 to 40, with 40 being the highest score. Higher total scores denote higher self-esteem. The RSES is a reliable and valid measure of global self-esteem (Gray-Little, Williams, & Hancock, 1997; Silber & Tippett, 1965), and has been widely used in Arabic-speaking samples (Abdel-Khalek, Korayem, & El-Nayal, 2012; Zaidi, Awad, Mortada, Qasem, & Kayal, 2015; Zayed et al., 2016). In the present study, the internal consistency reliability as determined by the Cronbach's alpha was  $\alpha = .79$ .

### **The Academic Self-Efficacy Sub-Scale**

The Academic Self-Efficacy (ASE) subscale of the Patterns of Adaptive Learning Scales (PALS) was used to measure academic self-efficacy (perceptions of their competence to complete their class work) (Midgley et al., 2000). It consists of 5 items, rated on a 5-point Likert scale (where 1= not at all true and 5= very true). The authors reported a Cronbach's alpha coefficient of .78 (Midgley et al., 2000). The ASE has been used with tertiary students (Hsieh, Sullivan, & Guerra, 2007) and is a valid and reliable measure (Dever & Kim, 2016; Huang, 2016). Because there is no Arabic version of the ASE, the scale was translated into Arabic and back-translated into English. The final version was reviewed and approved by bi-lingual experts. In this study, the internal consistency reliability as determined by the Cronbach's alpha was  $\alpha = .80$ .

### **The Perceived Stress Scale**

The Arabic version of the Perceived Stress Scale (PSS) was used to measure the levels of perceived stress (feelings and thoughts) experienced by

the participants during the past month (Cohen, Kamarck, & Mermelstein, 1983). The PSS consists of 10 items scored on 5-point Likert scale ranging from never (0) to almost always (4). The scale contains 4 positive items, which according to the developers, must be reversed before calculating the total score. Total score ranges from 0 to 40, with 40 being the highest score. Higher total scores indicate higher psychological stress. Total scores between 0-13 are considered indicators of low perceived stress, 14-26 moderate perceived stress, and 27-40 high perceived stress. The original PSS has demonstrated acceptable levels of validity and reliability (Cohen & Williamson, 1988; Sheldon Cohen & Janicki-Deverts, 2012). Similarly, the Arabic version of the PSS has also been widely used (Almadi, Cathers, Mansour, & Chow, 2012; Chaaya, Osman, Naassan, & Mahfoud, 2010). In this study, Cronbach's alpha was  $\alpha = .74$ .

### **The VARK Questionnaire**

The Arabic validated version of the VARK questionnaire, one of the most frequently used self-reported measures that assess learning styles, was used to investigate participants' preferred learning styles (Fleming & Mills, 1992). This scale contains 16 items that identify four styles of learning by sensory preferences: V (Visual), A (Aural), R (Read/write), and K (Kinesthetic). Each item has four options, each option corresponds to a learning style, and participants can choose more than one option. According to the VARK guidelines, preferred learning style(s) can range from unimodal, bimodal, trimodal to multimodal learning style (Fleming & Mills, 1992). The Arabic version of the VARK was found to be valid and reliable and has been extensively used with Arabic-speaking samples (Asiry, 2016; Stirling & Alquraini, 2017).

### **Data analysis**

Data analysis was conducted using IBM SPSS Statistics version 24.0 (IBM Corp, 2016). One of the requirements related to multiple regression is normality (Williams, Grajales, & Kurkiewicz, 2013) and hence all quantitative variables were tested for normality using Kolmogorov-Smirnov and Shapiro-Wilk tests. All variables were found to be non-normally distributed in this dataset and hence we decided to use a more conservative non-parametric statistical process. These variables were represented by medians  $\pm$  Interquartile Range (IQR). Spearman's rho was applied to detect correlations between the variables.

## Results:

### Descriptive statistics

Of the 290 invited participants, a total of 231 completed the questionnaires, of which 17 responses were discarded due to missing data. The study response rate was 79.6%.

As the sample were from the male university campuses, all 214 participants were males. More than half of the study sample (59.3%) was between the ages of 20-22 years. More than 95% of the sample were studying towards a Bachelor degree in psychology, and 4.2% were Masters degree students. Of those pursuing their Bachelor's degrees, over one-third were in the first year. Finally, most of the Masters level participants were in their first year. Demographic information of the study sample is presented in **Table 1**.

**Table 1.** Demographic profile of study participants

Variables		Frequency	Percent %
Age groups	17-19 years	15	7.0
	20-22 years	127	59.3
	23-25 years	61	28.5
	26-28 years	3	1.4
	32-34 years	8	3.7
Gender	Males	214	100
	Females	0	0
Marital status	Married	12	5.6
	Single	202	94.4
Level & Year of study	Bachelor Degree	205	95.8
	First-year	82	38.3
	Second-year	30	14
	Third-year	46	21.5
	Fourth-year	47	22
	Master Degree	9	4.2

Non-parametric (median  $\pm$  IQR) measures were computed for GPA, ASE, RSES, PSS, and learning styles (see **Table 2**). Median GPA among study participants was 3.30 out of 5. For the ASE, total scores ranged between 5 and 25. For the RSES and the PSS, the range for the total scores was between 0 and 40.

**Table 2.** Descriptive measures of quantitative variables

Variable	Median $\pm$ IQR
GPA	3.30 $\pm$ 0.77
ASE	18 $\pm$ 5
RSES	22 $\pm$ 4
PSS	29 $\pm$ 5
VARAK modality scores	
Visual	6 $\pm$ 4
Auditory	7 $\pm$ 4
Reading/writing	7 $\pm$ 3
Kinaesthetic	7 $\pm$ 3

ASE= Academic Self-Efficacy subscale; RSES= Rosenberg Self-Esteem Scale; PSS= Perceived Stress Scale, IQR= Interquartile Range

### Stress rates and preferred learning styles

The prevalence of stress among the sample was high. Based on participants' total scores on the PSS, 71% were highly stressed and 29% were moderately stressed. Median and IQR for the VARK scale are shown in **Table 2**. The majority of the study participants (94%) were multimodal in their learning style.

### Correlations of self-esteem, academic self-efficacy, and perceived stress levels with GPA

Academic performance was found to have **low** but significant correlations with academic self-efficacy,  $r_s(212) = .188$ ,  $p = .003$ , and self-esteem,  $r_s(212) = .121$ ,  $p = .039$ , meaning that an increase of academic self-efficacy or self-esteem would increase the GPA and vice versa. However, academic performance was not correlated with perceived stress levels. **Table 3** displays Spearman's rank-order correlation coefficients between the variables.

**Table 3.** Correlation coefficients between academic performance and academic self-efficacy, self-esteem, and perceived stress

	Spearman's rho	Academic Self-Efficacy	Self-Esteem	Perceived Stress
GPA	Correlation Coefficient	0.188*	0.121**	-0.039
	Sig. (1-tailed)	0.003	0.039	0.285
	n	214	214	204

\*Correlation is significant at the 0.01 level (1-tailed).

\*\*Correlation is significant at the 0.05 level (1-tailed).

### Discussion:

The purpose of this study was to measure stress levels, assess preferred learning styles, and investigate the relationships between self-esteem, academic self-efficacy, perceived stress levels and academic performance

among psychology students in Saudi Arabia. More than half of the sample reported high levels of stress and preferred a multimodal learning style. Self-esteem and academic self-efficacy had small but significant correlations with academic performance, but no correlation with perceived stress levels was found. These findings are consistent with previous research conducted in Saudi Arabia with medical and dental students and elsewhere, although this study has focused on a Saudi Arabian cohort not previously investigated.

The RSES-10 items (Rosenberg, 1965) had adequate internal consistency in the present study ( $\alpha = .79$ ), similar to studies conducted with a Saudi female sample (Zaidi et al., 2015). Self-esteem revealed a low but significant correlation with academic performance. This result is consistent with previous research (Booth & Gerard, 2011; Edwards et al., 2010; Lane, Lane, & Kyprianou, 2004; Pullmann & Allik, 2008; Saadat, Ghasemzadeh, & Soleimani, 2012). However, there appears to be gender differences, with studies often reporting higher levels of self-esteem in male participants than females (Hamaideh & Hamdan-Mansour, 2014; Huang, 2010; Saadat et al., 2012). A recent large-scale cross-cultural study looked at age and gender differences in self-esteem ( $n = 985,937$ ) across 48 nations and concluded that males consistently reported higher self-esteem than females (Bleidorn et al., 2016). Similar findings are reported in Arabic speaking nations (Abdel-Khalek et al., 2012). In the present study, our sample composition of male participants did not allow this gender difference to be explored.

The 5-item ASE subscale of the PALS had adequate internal consistency in this study ( $\alpha = .802$ ). In line with findings from previous research (Afari, Ward, & Khine, 2012; Cayubit, 2014; Gore, 2006; Khan, 2013), academic self-efficacy was found to be significantly correlated with academic performance, however, the magnitude of this correlation was small. Researchers have investigated the association between academic achievement and academic self-efficacy, more specifically English discourse writing, and found a positive association (Adelodun & Asiru, 2015), but other studies did not (Al-Mekhlafi, 2011). Positive correlations between self-efficacy and reading and meta-comprehension among non-native Arabic speakers have also been established (Ghraibeh, 2014). Moreover, although not tested in the present study, research suggests a gender gap in academic self-efficacy favoring males over females in some content domains such as physics (Cavallo, Potter, & Rozman, 2004). In a meta-analysis, Huang (2013) explained that gender difference in academic self-efficacy is largely influenced by content domain and age.

In this study, these correlations were low but significant indicating that other variables will likely add value when exploring the relationships between self-esteem, academic self-efficacy and academic achievement. In future

research, other factors such as, test anxiety, intrinsic value and so forth could be added to the variables of interest (Pintrich & de Groof, 1990).

The PSS also had adequate internal consistency ( $\alpha=.74$ ), similar to studies conducted with Jordanian samples (Almadi et al., 2012; Hattar-Pollara & Dawani, 2006). Prevalence of stress in the present sample was high, with 71% of the sample being highly stressed. This is consistent with studies carried out in Saudi Arabia and Egypt on stress prevalence. For example, studies have reported high stress rates among medical and dental students (Abdel Rahman, Al Hashim, Al Hiji, & Al-Abbad, 2013; Abdel Wahed & Hassan, 2017; Abdulghani et al., 2014). Furthermore, no correlation was identified between academic performance and perceived stress levels in the present study. This finding is also consistent with results of Abdulghani (2008), Abdulghani and colleagues (2011), and Emmanuel et al. (2014), who also found no direct correlations between stress and academic performance. Other studies have found a negative but non-significant association between stress and academic achievement (Khan, Altaf, & Kausar, 2013; Sohail, 2013).

In general, the findings of this study indicate that this group displays higher levels of stress compared to the general population, and furthermore aspects of grade achievement are associated with self-esteem, academic self-efficacy and perceived stress. Nonetheless, the group under investigation has two main dimensions associated with discipline (psychology students) and region (Saudi Arabia). Without specific control groups, the findings are unable to unpack the full implications associated with each dimension. However, these findings suggest that investigations of these dimensions would be worthwhile.

A limitation of this study is its cross-sectional design, where the relationship between the dependent and independent variables are examined at a single point of time. Second, this study employed a relatively small sample, which further limits the generalizability of findings. Our sample was drawn from only two universities in Saudi Arabia, where there are more than 30 universities. Future studies should attempt to recruit a larger representative sample of both females and males across the country. Moreover, a response bias is also possible, especially regarding the self-disclosed GPA; however, this may have been minimized by the anonymous nature of the study.

## **Conclusion**

This study revealed high levels of stress among male psychology students. Consistent with previous research, results showed small but significant correlations between academic performance and self-esteem and self-efficacy and no correlation with perceived stress among psychology students in Saudi Arabia. Future research should explore the sources of stress and coping strategies among this group of students. Investigations into gender



differences in relation to self-esteem, academic self-efficacy and stress are also warranted.

### **Acknowledgment:**

This research did not receive any specific grant from any funding agencies.

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# **Discipline Strategies: Influence on Gender and Academic Level of Students: A Case of Rachuonyo North Sub-County, Homabay County, Kenya**

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doi: 10.19044/ejes.v4no3a6 [URL:http://dx.doi.org/10.19044/ejes.v4no3a6](http://dx.doi.org/10.19044/ejes.v4no3a6)

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## **Abstract**

This paper purposed to establish if there was a significant influence of discipline strategies on student academic performance based on the gender and academic level of students in Homabay County, Kenya. Over the years, students in Rachuonyo North Sub County have continued to perform poorly in Kenya Certificate of Secondary Education (K.C.S.E). The objective of this study is to determine the influence of discipline strategies on academic performance by gender and academic level. The research design used was causal comparative. The researcher used simple random sampling to select 23 schools. Purposive sampling was used to identify students at different academic levels who had received any of the three discipline strategies that is suspension, manual labour, and sending students home to call their parent. The quantitative data was analyzed using paired sample t-test and repeated measures ANOVA at .05 level of significance. The study findings indicated that girls performed poorly after discipline strategies had been used on them. However, there was no significant difference in the academic performance of boys after the discipline strategies. It emerged that these discipline strategies influenced students' academic performance differently depending on the academic level of the student with the form two and four students registering a decline and the form three students showing a slight improvement. The study recommends discipline strategies other than the three used in the study for girls. Further research is required to determine the influence of these discipline strategies in other counties.

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**Keywords:** Discipline Strategies, Academic performance, gender, Academic level, High school students, Kenya.

## **Introduction**

School discipline refers to all the strategies which are used to regulate, coordinate, and organize students and their activities in the school as well as put in place the provision and procedures necessary to establish and maintain a conducive environment in which teaching and learning can take place (Thornberg, 2008). In Kenya education system, the advancement of students is solely based on student academic performance in national examinations (Nyangaka & Odongo, 2013). For this reason, the national examinations were used above all to select those suitable to proceed to the next stage of education. Due to this emphasis on national examination, every single Kenyan in the education setup strives to attain a good grade in order to proceed to the next level. Also, any case of poor performance is taken seriously. While poor performance is applicable to most counties in the country, other counties have a record of perennial mass failures in national examinations. This is especially so in Homabay County where students have continued to perform poorly in KCSE (Nyangaka & Odongo, 2013; Ogwen, Kathuri & Obara, 2014). Due to this poor performance, most stakeholders in the district including teachers, parents, and education officers are looking for answers to explain this phenomenon. Although there are several factors which have been documented to have influenced the academic performance of students in Rachuonyo North Sub County (Ogwen, Kathuri & Obara, 2014), discipline strategies as a factor has not been looked into. It is therefore important to have an in depth assessment of the influence of discipline strategies on academic performance of students in terms of gender and academic or class level of students. The discipline strategies included in this study are: suspension, manual labour, and sending students home to call their parents.

## **PURPOSE AND OBJECTIVES OF THE STUDY**

The purpose of this study is to determine the influence of discipline strategies on academic performance of girls and boys in Homabay County. In order to attain this purpose, the study was guided by the following objectives:

1. To determine the influence of discipline strategies on academic performance by gender.
2. To determine the influence of discipline strategies on academic performance by academic level.

## **MATERIALS AND METHODS**

The study was conducted in Rachuonyo North Sub County in Homabay County. The study employed causal comparative research design whose main purpose was to explore the interlink between variables (Mugenda & Mugenda, 1999). The population of the study comprised of 23 schools in

Rachuonyo North Sub County, Homabay County. The accessible population were form 2, 3, and 4 students. The researcher used document analysis for the students. This involves analysis of documentary materials that are in print form (Kothari & Gaurav, 2014).

Simple random sampling was used to select 23 schools out of the 43 schools in the county. Purposive sampling was thereafter used to identify the form 2, 3, and 4 students who had received any of these discipline strategies with the help of the class teachers. The researcher went through the documents containing the students' results in order to find out the academic performance before and after receiving the discipline strategy. The researcher went through the academic results (in all subjects and obtained a mean score) of the identified student specifically in the exam which was done just before the discipline strategy was used on them. However, the results of the immediate exam which was done after the discipline strategy were used on them.

Data was analyzed with the help of the Statistical Package for Social Sciences (SPSS V20.0). The quantitative data was analyzed using paired sample t-test at .05 level of significance and repeated measures analysis of variance (ANOVA) to compare the academic performance of students before and after the discipline strategies had been given (Kothari, 2004).

## **FINDINGS**

In this study, two hypotheses were tested;

**HO<sub>1</sub>:** There is no significant difference in academic performance of students by gender.

**HO<sub>2</sub>:** There is no significant difference in academic performance of students by academic level.

### **Academic Performance of Students by Gender Before and After Discipline Strategies**

In testing the first null hypothesis, a t-test for paired observations at .05 was computed in order to compare the means of girls and boys independently before and after discipline strategies were given. Table 1 show the results of the analysis for boys.

**TABLE 1. ACADEMIC PERFORMANCE OF BOYS BEFORE AND AFTER THE DISCIPLINE STRATEGY**

Pair	Before - After	Paired Differences			95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean				
1		1.00	9.50	1.16	-1.31 3.31	.86	66	.39

**Source: Survey Data (2016)**

Table 1 indicates that the computed t-value is .86 with a df of 66. The critical t-value is 1.64 with a df of 66. This is an indication that the critical value is higher than the t-value ( $t_{ob} = .86 < t_{crit} = 1.64$ ) which suggests that there is no significant difference in the academic performance of boys before and after they were given the discipline strategies. The academic performance of the boys did not show any major difference before and after the use of the discipline strategies.

**TABLE 2. ACADEMIC PERFORMANCE OF GIRLS BEFORE AND AFTER DISCIPLINE STRATEGIES**

Pair	Before - After	Paired Differences			95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean				
1		5.58	12.10	2.37	.68 10.46	2.34	25	.02

**Source: Survey Data (2016)**

From the results in Table 2, the paired difference mean before and after the discipline strategies was 5.58 with a standard deviation score of 12.10 at 95% significance level. The computed t-value is 2.34 with a df of 25. The critical t-value is 2.06 with a df of 25. This implies that the t-value is more than the critical t-value which can also be represented as ( $t_{ob} = 2.35 > t_{crit} = 2.06$ ). This suggests that there exist a significant difference in the academic performance of girls before and after the discipline strategies had been used on them. This implies that the academic performance of girls went down after they had received these discipline strategies. Also, this is an indication that the discipline strategies had a negative influence on the academic performance of girls in Rachuonyo North Sub County, Homabay County.

To test the first hypothesis ( $H_{O1}$ ) which state that there is no significant difference in academic performance of students by gender, the

researcher used a paired sample t- test to compare the academic performance of boys and girls before and after the discipline strategies were used on them at .05 significance level. Therefore, the descriptive statistics are given in Table 3.

**TABLE 3 ACADEMIC PERFORMANCE OF BOYS AND GIRLS BEFORE AND AFTER DISCIPLINE STRATEGIES**

Gender		Performance Before	Performance After
Boys	Mean	36.71	35.71
	N	67	67
	Std. Deviation	17.37	15.78
Girls	Mean	35.73	30.15
	N	26	26
	Std. Deviation	19.12	13.26
Total	Mean	36.44	34.16
	N	93	93
	Std. Deviation	17.77	15.26

Source: Survey Data (2016)

The results on Table 3 indicate that the mean average performance of boys declined slightly by 1.00 after the discipline strategies were used on them. In addition, the mean average performance of girls declined by 5.58. This implies that girls declined to a greater extent after the discipline strategies had been used on them than boys. To test whether these differences were significant, a paired sample t-test at .05 level of significance was computed and the results are given in Table 4.

**TABLE 4. ACADEMIC PERFORMANCE OF STUDENTS BY GENDER BEFORE AND AFTER DISCIPLINE STRATEGIES**

Pair	Before- After	Paired Differences				t	df	Sig. (2- tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower Upper			
1		2.27	10.43	1.08	.12 4.42	2.10	92	.038

Source: Survey Data (2016)

From Table 4, the paired difference mean before and after the discipline strategies was 2.27 with a standard deviation score of 10.43 at .05 significance level. The computed t- value is 2.11 with a df of 92. The critical t-value is 1.96 with a df of 92. This implies that the t-value is more than the critical value which can also be represented as ( $t_{ob} = 2.11 > t_{crit} = 1.96$  at  $p < .05$ ). This suggests that there exist significant difference in the academic performance of girls and boys before and after the discipline strategies had been used on them. This implies that the hypothesis  $H_{O1}$  which states there is



no significant difference in academic performance of students by gender is rejected. These finding contradicts the finding of Kravevich, Slate, Kesley, Carmen, and Delgado (2010) who found that girls performed better than boys after these strategies had been used on them.

**Academic Performance of Students by Academic Level Before and After the Discipline Strategies**

In testing the second hypothesis (HO<sub>2</sub>) which states that there is no significant difference in academic performance of students by academic level, the researcher computed a t-test for paired observation to compare the means of form two, form three, and finally form four students independently. Repeated measures analysis of variance (ANOVA) was thereafter computed to test the hypothesis. To begin with, a t-test for paired observation was computed to compare the academic performance of form two students before and after the discipline strategies and the results is shown in Table 5.

**TABLE 5. ACADEMIC PERFORMANCE OF FORM TWO STUDENTS BEFORE AND AFTER DISCIPLINE STRATEGIES**

		Paired Differences						t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	Lower	Upper			
Pair 1	Before - After	5.71	14.25	3.81	-2.51	13.94	1.50	13	.15	

Source: Survey Data (2016)

The results in Table 5 indicate that the paired difference mean before and after the discipline strategies was 5.72 at 95% confidence level. The computed t-value is 1.50 with a df of 13. This is less than the critical t-value which is 2.16 with a df of 13. This implies that the difference was not significant.

**TABLE 6. ACADEMIC PERFORMANCE OF FORM THREE STUDENTS BEFORE AND AFTER THE DISCIPLINE STRATEGIES**

		Paired Differences						t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	Lower	Upper			
Pair 1	Before - After	-.84	8.20	1.31	-3.50	1.81	-.64	38	.52	

Source: Survey Data (2016)

From Table 6 above, the paired difference mean before and after the discipline strategies was .84 with a standard deviation of 8.20 at .05 significance level. The computed t-value was .64 with a df of 38. The critical t-value is 1.96 with a df of 38. This can also be represented as ( $t_{ob} = 0.64 < t_{crit} = 1.96$ ). This suggests that there is no significant difference in the academic performance of the form three students before and after the discipline strategies.

**TABLE 7. ACADEMIC PERFORMANCE OF FORM FOUR STUDENTS BEFORE AND AFTER THE DISCIPLINE STRATEGIES**

Pair	Before - After	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
1		2.22	10.88	1.72	-1.25	5.70	1.29	39	.20

Source: Survey Data (2016)

Table 7 indicates that the paired difference mean before and after the discipline strategies was 2.22 with a standard deviation of 10.88 at 5% level of significance. The computed t-value is 1.29 with a df of 39. The table value is 1.96 with a df of 39. This implies that the t-value is less than the critical t-value. From these results, there is an indication that there is no significant difference in the academic performance of the form four students.

To test the second hypothesis (**HO<sub>2</sub>**) which states that there is no significant difference in academic performance of students by academic level, the researcher used repeated measure Analysis of Variance (ANOVA) to compare the academic performance of the form 2, 3, and 4 students at .05 level of significance.

**TABLE 8. REPEATED MEASURES ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	231786.86	1	231786.86	468.64	.000
Within Groups	99.44	92	56.01		
Total	231886.30	93			

Source: Survey Data (2016)

From the repeated measures ANOVA,  $F(1,92) = 468.64 \geq p = .000$ . However, this means the null hypothesis **HO<sub>2</sub>** which states that there is no significant difference in academic performance of students by academic level

is rejected. Thus, there is a significant difference in academic performance of the students by academic level.

## DISCUSSIONS

The study aimed at examining the influence of the discipline strategies on academic performance based on gender and the academic level of the student. The results revealed that the academic performance of girls went down after they had received the discipline strategies with a mean difference of 5.58 and a t- value of 2.35 which was greater than the critical t- value of 2.06. This is an indication that the discipline strategies had a negative influence on the academic performance of girls in Rachuonyo North Sub County. This finding is in agreement with the findings of Perry (2015) and Dahir (2010) which revealed that suspension is harmful to the student's academic performance. On the other hand, the study revealed that the academic performance of boys went down slightly with a mean difference of 1.00 which was not statistically significant. This was an indication that the discipline strategies had a negative influence on girls' academic performance more than it had on boys' academic performance. This is contrary to the study findings of Kravevich, Slate, Kelsey, Carmen, and Delgado (2010) which confirmed that girls who received suspension for example were performing well than boys who received the same discipline strategy. In regard to the first hypothesis which stated that there is no significant difference in academic performance of students by gender, the results confirmed that there was a significant difference in academic performance of students by gender since the t- value was greater than the critical t- value.

In response to the second objective, the study revealed that the academic performance of the form two students declined after the discipline strategies had been used on them with a mean difference of 5.71. On the other hand, the form three academic performances increased slightly after the discipline strategies had been used on them with a mean difference of 0.84. Nevertheless, this difference was not statistically significant. The studies also revealed that the academic performance of the form four students declined slightly with a mean difference of 2.22 at a t-value of 1.29 which was less than the critical t- value of 1.960 and therefore this difference was not statistically significant.

In testing the second null hypothesis which stated that there is no significant difference in academic performance of students by academic level, the alternative hypothesis was accepted with  $F(1,92) = 468.64 \geq p = .000$ . This means that there was a significant difference in academic performance of the form two, three, and four students before and after the discipline strategies had been used on them in Rachuonyo North Sub County, Homabay County.

The study findings therefore revealed that there was significant difference in academic performance depending on the academic level of the student.

## **CONCLUSION AND RECOMMENDATIONS**

From the study findings and discussions, the following conclusions were deduced. Girls' academic performance is adversely influenced by these discipline strategies than the academic performance of boys since their academic performance goes down largely after the discipline strategies have been used on them.

The discipline strategies influence the academic performance of students in different ways depending on the academic level of the student. Consequently, the form two students' academic performance decline drastically, the form three academic performance improve, and the form four academic performance decline slightly. The study recommends that education stakeholders should find alternative to exclusionary discipline, especially for girls. This is because girls are adversely affected by the discipline strategies that require that they go home for a certain period of time. More research should be done on the best discipline strategies at each academic level since the strategies that involve removing a student from academic setting are seen to influence their academic performance in different ways. Therefore, this would ensure that discipline is maintained in a school and at the same time, the academic performance of students at different academic levels is not interfered with.

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# The Impact of Professional Experience on Teaching Conceptions in University -Case Studies from Tunisia-

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doi: 10.19044/ejes.v4no3a7 [URL:http://dx.doi.org/10.19044/ejes.v4no3a7](http://dx.doi.org/10.19044/ejes.v4no3a7)

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## Abstract

Higher education is a contract between professor and student; which specifies what each pole can expect from the other (Johnson, 1995). The strategies, techniques and devices used by teachers to achieve their personal, scientific and technical purposes during their lessons are the subject of various researches in didactics. This research is in line with the scientific orientation of clinical didactics, which is characterized by a double theoretical and epistemological affiliation: didactics and clinical psychoanalytic inspiration. We are interested in the singularity of the subject teachers *taken in didactics*. In Tunisia, most higher education teachers do not have professional and continuous education in pedagogy and didactics, and no follow-up in their careers. As if the question did not arise and the ability to accompany students, to develop their critical thinking skills and to promote their learning was self-

evident. The aim of this work is to insist on the importance of continuing education and professional development of experienced university teachers.

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**Keywords:** University didactics, clinical didactics, professional experience, experienced university teacher, continuing education.

## 1. Introduction

University environment have known, in Tunisia and all around the world, many transformations in the recent years as an answer to different factors. Among these factors, we can cite the great development in new communication and information technologies, the accelerated mutation of knowledges, the consideration of social, affective and psychological characteristics of students and the increasing improvement in number and the massification at university (Henkel, 2000; Romainville, 2004; Fozing, 2013; Scott, 1995).

Recent researches estimate that the observed changes at the level of students, compared to that of social and cultural environment, encourage as to rethink in university mission and in our teaching methods at the same time, which makes clear the necessity to declare the following statement: the preoccupation, tasks and professor function, are supposed to evolve in order to adopt the deep mutation that the university is witnessing (Renault, 2002; Romainville, 2000).

According to Peterson (1979), a well-known researcher in pedagogy, « to teach, it does not consist only in knowledge transmitting to students and/or to dispense knowledge from a high position (chair), but teaching is also to demonstrate susceptible and pedagogical devices to help students optimize their apprenticeship and also help them acquire new theoretical, practical and professional knowledge » (Peterson, 1979, pp55-56).

We are going to focus on teaching practices analyzed at university level via the relationship of knowledge to teaching conceptions of two-experimented university Teachers. Here we refer back to the EDIC1 Analysis Framework (Terrisse & Carnus, 2009; Carnus & Terrisse, 2013) which questions the contents of teaching in comparison with transmission conditions and the appropriation of the subject (teacher or learner). This approach is based on a theory that subject takes on its full meaning during the « case by case » analysis. The subject teacher is considered as a liable and divided singular (Terrisse, 1999; Carnus, 2004).

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## **2. Problem setting and research questions**

With what the subject teach is caught in teaching? Is he struggle to exert his didactic and professional action? Is he fits student needs? These are the question that promotes us to bring some elements of the answer that contributes to uncover the veil of teaching practice in university. In this context, it is better to remind that university teachers are supposed to carry on two main missions, i.e. a teacher or a former and a researcher. University teachers are supposed to articulate these two functions together and proved to be out taken or out stripped through time letting an open path to be contextualized and/or recontextualized knowledge construction. This is possible for them via a scientific and professional development process and a permanent apprenticeship process of profession (Maulini & Perrenoud, 2005).

Massification, low level, university teaching crisis, university weaknesses, a reality to be believed that the university is not what it used to be and students are not what they used to be. To face this discourse of lamentation, one must see to what the disappointed does not think. It should be noted also to put in evidence that university failure is knowing an impressive augmentation (Romainville, 2000). In this way, the pedagogy at the university level was supposed to tackle fundamental problems more than that of knowledge genesis, their sharing, their appropriation and their mobilization. It is also responsible about the democratic repartition of responsibilities at the level of knowledge management. The idea consists in what the student of the university shares with his teachers the responsibility for defining the objectives, the conceptual and interactive modes of the teaching/apprenticeship and the systems of evaluation. From this point of view, it is possible to explain this "crisis" or the teaching insufficiency of teachers / methods, resources, abilities and competences. According to the prism of their professional experience, their professional developpement, their continous formation and their teaching practices. This research aims at providing answers to the following questions:

- 1- Is the teacher professional experience in university could have an impact on teaching conceptions, relationship to knowledge(s), link to job (Buznic, Terrisse & Margnes, 2007; Buznic, Terrisse, Lestel, 2008) and on their teaching practice, didactic and professorial action?
- 2- Is there a relationship between teacher's professional experience and the development of student apprenticeship process?

## **3. Conceptual and theoretical framework**

### **3.1 Relationship to knowledge**

Within the framework of this research, we focus on the notion of the relationship to knowledge in an orientation particularly turned to the analysis of the teacher « as author and creator of knowledge » (Beillerot, 1996). This



notion is defined by Beillerot (Op. Cit.) as « *the subject disposition towards the knowledge which takes into consideration his entire history: His way to know, to learn, and his desire to know* ». This author persists on the creative voice of this notion reaching the intervention possibility. According to Leonardis, Laterrasse & Hermet (2002), the study of the relationship to knowledge involves the consideration in « the way the subject is affected by the transmitted knowledge and the way the signified it and how it is related to ». The expression « relationship to knowledge » also based on total systematic steps which in fact implies to three types of relationships (or links) to knowledge (Chevallard, 1989); the institutional relationship to knowledge, the official relationship and the personal relationship to knowledge. But in the framework of our research, we limit ourselves to both registers that we have already studied; the official and the personal relationship to knowledge.

In the field of the clinical didactics, Carnus (2013, p24) considers that the subjects *taken in didactics* are taken in triple relationships: to knowledge(s), to the proof test, and to the institution. In fact, for Carnus (Op. Cit, p24), « the relationship to the institution is the product of a singular history and weaves with the relationship to the knowledge and the the relationship to the proof test an “already there” upstream of the decisions of the teacher subject ». In this study, we have the intention to spot and to analyse, from this relationship to knowledge, the teaching and apprenticeship conceptions through considering the external influences, to conjugate and to interlace internal factors that are proper to the subject and are « *taken from didactics* ». Some of these internal factors are lifted up from the unconscious process during the didactic functioning that have diet and indirect affects on the « taught » or « learned » knowledge.

### **3.2 The impossible to endure**

The impossible to endure is one of the definitions of reality as it is stated in lacanian topology of the structure of the subject (Lacan, 1966). Since the teacher could not master everything from a didactic point of view. He tries to engage to do the best to each student. But his « already-there » orients his didactic choices (Ben Jomaa, 2014) *in situ*, his capacity to manage the didactic time (Mercier, 1997), student heterogeneity, issue diversity and didactic steps in a complex and moving class situation. The « already-there » contains various aspects of the relationship to knowledge(s). Indeed, it is about structural aspects, with regard to his conceptual, experiential and intentional elements, functional aspects, in view of his influences on the taught knowledge(s) and dynamics aspects seen his evolutionary character in a constructed temporality (Carnus, 2015, p64). So, we postulate, with the EDIC works, that his « already-there » that is actualized in the reality of the class, orients his choices without knowing that Makes him incapable to support some

of the didactic functioning aspects. For his paper reasons and because of that he is not usually conscious.

### 3.3 Teaching conception

According to Charlier (1998), we define the conceptions as subject proper mental constructions which elaborate in function of the subject himself and his interactions with environment. From an operational point of view, they are self-reported states relating to the cognitive dimension and to the teacher way of thinking. Many authors are interested in the links between the taught and teacher's practice from the belief angle (Fang 1996; Guskey, 2002; Richardson, 1996), social representations (Spallanzani, Biron, Larose, Lebrun, Lenoir, Masselier, Roy, 2001) and conception (Charlier, 1998; Tillema & Knol, 1997). For Carnus (2015, p 64), the teaching conception is connected to the « conceptual already-there ». Indeed, the « conceptual already-there » articulates around the conceptions, the faiths and the values of the teacher.

## 4. Methodology

### 4.1 Study population

Our study population based on two experimented university teachers: Lina and Sirine. They have the same university grade (Assistant professor) and that exercise their profession in the Higher Institute of Sport and Physical Education in Tunis (**Table 1**).

Table 1: Presentation of the two cases.

	<b>Teacher 1: Lina</b>	<b>Teacher 2: Sirine</b>
<b>Professional experience</b>	More than 10 years	More than 10 years
<b>Specialization (Taught discipline)</b>	Physical education didactics and pedagogy	Sports psychology
<b>University rank</b>	“Maître-Assistant”	“Maître-Assistant”

### 4.2 Data collection

We filmed two magistral courses to each teacher, each course lasts one hour and half between January 2016 and May, 1<sup>st</sup> of 2016. For ethical considerations we proceed by a pre-observation to familiarize the two teachers and students with our objective and of the presence of technology device to reduce its effect.

For the sake of congruence, the epistemological consequences that we have selected results in methodological consequences that we can resume in two inter-related points which draw the object of this text the study case and the recourse to a three-phase « temporal » methodology, « the already-there » the test, and « the after-stroke » (Terrisse & Carnus, 2009).

#### **4.2.1 The already-there**

The « already-there » is a theoretical notion heuristics and a didactic concept used by the researchers of the EDIC. It is also the first time of the research, it is designed like a « didactic action filter » which strongly influences « didactic interaction » (Loizon, 2009). It acts on decisions taken by the subject teacher starting from a swaying between conscious and unconscious state. His already-there is spotted starting from a prior interview and designed as Carnus clarifies (2003) « personnel inherited fifteen of experience, a conscious composant and unconscious one which affects the subject ».

#### **4.2.2 The proof test**

In clinical didactics researches, the proof test is the one at first of the subject (teacher). It is strongly associated with the question of the contingency, which is what can not be (Carnus & Terrisse, 2013, p 142). It is also the observation moment, the session and the confrontation of the teacher with his class and with knowledge. It is the second time of data collection which based on two filmed recordings (sound and visual trace). In the case of our study, the zoom is centered towards the subject teacher and it also recollects the teacher sayings (retranscribed to verbatim) and captures his movements and interactions with his students. The analyzer of the proof test is the category of the knowledge (official and/or personal) identified through the “transmitted knowledge” indicator.

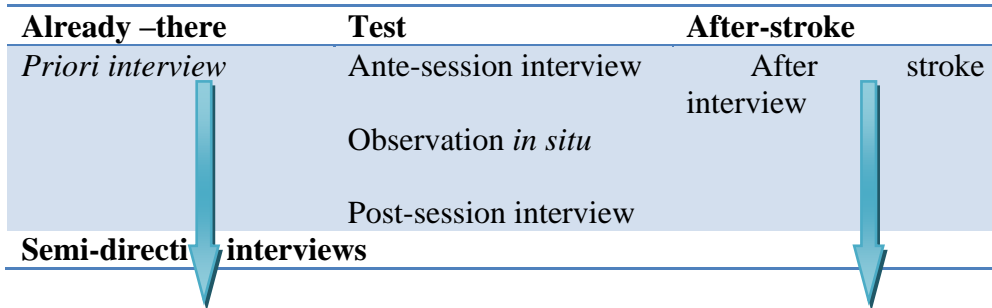
#### **4.2.3 The after-stroke**

Besides data collection thanks to the post-session interview, the after-stroke interview allows to complete the informations through reconstruction and relaboration of the knowledge by the teacher himself from a focus of meaning reshuffle. The after- stroke is the third time of the research. It permits to use the effected analysis thanks to video-recording in a destined interview. It is also a process of reorganization, reconstruction of the mnesic sources (Freud, 1895). The teacher himself expresses another point view compare to that declared in his immediate reaction. Thus, the after-stroke is a conceptual tool. In fact, « what is looked for, they are the reasons of the didactic act » (Terrisse, 2009, p. 28).

#### **4.2.4 Data triangulation**

Analogically to the used triangulation in maths didactics, the triangulation of qualitative methods mode by the cross-use of different data collection technics. This crossing is called triangulation or « mixed-methods » and it is defined as « the combination of methodologies in the study of the same phenomenon » (Denzin, 1978; Jick, 1979). This method (**figure 1**)

allows to compare some filmed data (via video observation) to verbal data (via interviews and the session verbatim) or written (via synoptic sheets and the verbatim retranscription).



**Figure 1. Method of data triangulation.**

#### 4.3 Data analysis method

For the analysis of the collected data, we referred to the methodological qualitative approach which characterise particularly our clinic approach that allows us to work on qualitative data (pictures and words) and to move from the description towards the understanding by including certain significations and starting from the selected data analysis in addition to the recourse to didactic analysers doing this, we referred to the method of content analysis which represents according to Bardin (1997, p. 14): « *one of the developed technics by and to human sciences. It aims to a second reading of the message to substitute to the intuitive and instinctive in interpretation to the constructed interpretation* ». We have proceeded to content analysis relying on three categories of prior constructed knowledges which take into account our research question...relationship to knowledge, teaching conceptions and the impossible to endure. These categories serve to list, to codify, to classify and to condense the content body « floating » reading (Bardin, op. Cit) and many successive readings were realized with the aim to extract the general meaning of the professional experience of the two teachers. Moreover, we used the cutting technique of the text (Bardin, op. Cit) to extract some « significant » of the subject and/or « meaning units ». These significant extracts of verbatim allow to « describe the case » and to « construct the case with the analysis » (Passeron & Revel, 2005) in a relationship with our research problematic we also integrate proofs intake starting from extracted citations from the subject discourse. In fact, the construction of the case passes by the taking of the significant of the subject, because, as indicates it Lacan (1973, p. 626), « the significant represents the subject for another significant ».

## 5. Results

Results of this study structure around three analysers, presented respectively to teach case: the relationship with the knowledge, the teaching conception and the impossible to endure.

### 5.1 Lina: « *To teach, it is to like what we do* »

- Official relationship to knowledge: Lina seems to obey institutional constraints (conventional, institutional texts, official program). In effect she has the intention to obtain an official relationship to knowledge in a way that the two objective courses she ensured are related to program as well as to the curriculum of the fundamental licence formation in physical education: « *I am afraid of “zapping” the contents of the programs, I have to teach them* ».

- Personal relationship to the knowledge: Lina confirms that she is usually in update compared to what is occurring or taking place in her research domain. All this has been done through her participation in seminars and research profile. This remarks allow us to emphasize the she undertakes a personal relationship to the knowledge of the experience which structure around her informal conception (depassing the formal framework of the institution). She teaches relying on her personal experience that is constructed along her career as a researcher and a teacher. She also affirms her narrow and « personal » relationship to structured profession surrounding the love and the pleasure of teaching the discipline (didactics): « *the latter pleases me a lot as a discipline, this is mine* » (*a priori* interview).

- Personal teaching conception: the teaching conception of Lina is particularly marked by « *the pleasure of teaching the didactic discipline* ». This conception is « personal » rested principally on an interactive note of teaching and a « *pedo-centered* » conception which fostering the integration of the student in his proper apprenticeship, through questions, discussions and constructive situation problems. From here, we noted that personal conception of Lina mobilizes frequently and intimately relied on personal relationship to knowledge. The extended and actualized deep knowledge of the teaching discipline and to a dynamic desire to teach (Mothes, 2016) relating to the class management: « *To teach, it is to like, to like the discipline, the students, to like acquiring some experience, to like what we do* ».

Lina assumes a very near position to the teaching knowledge or even an absence of distancing within a domain which is for her an intimate place of personal issues that she is inscribed in a long time ago.

- The impossible endure: Lina uses an interactive style as a didactic modality which promotes her to confront with her « impossible to endure » which is itself the issue modification of knowledge by the student and the denaturation of the wrong comprehension meaning: « *no, it is not that, this does not have any relationship with what I'm explaining, why did you say that?*

». Lina manifests « her impossible to endure » equally when students are not in concentration, she does not manifest their desire to learn or they maintain a distant relationship to the transmitted knowledge in class: « *I explained this many times, why cannot your answer this question?* » which explains the lack of desire to learn among students: « *It looks like the students do not want to learn* ».

It is a statement that is not noted at the level of the teacher that has the desire to teach the discipline.

### **5.3 Sirine:** « *I am not satisfied; I should have done better* »

- Official relationship to knowledge: the highlighted knowledges of Sirine are in content to official programs (official instructions, institution project, and official knowledge). This allows us to note a recurrent reference to the accompanying texts. The teacher subject is “assujetti”. Indeed, « several institutional “assujettissements” may engender a game of co-determination resources-constraints for the teacher » (Carnus, 2015, p. 63). His relationship to the institution becomes updated in his official relationship to knowledge.

- Personal relationship to knowledge: when we called Sirine to describe her referential formation, she responds: « *yes evidently, by the help of associations, trainings continuous formation, seminars, colloquies, Internet, books...* »; « *I refer to my personal knowledge and my personal experience in the university teaching* ». This declaration allows deducing that she maintains equally a personal relationship to knowledge structured around her personal relationship to knowledge structured around her personal conception of teaching of his personal constructed experience as a researcher and as a teacher. In addition to this feeling of pleasure when she teaches, she accents on the importance of the issues concerning teaching the discipline to students. Sirine is marked by an « already-there » which influences her relationship to the discipline « psychology » the latter affects her and feels pleasure when teaching it: « *the teaching of the psychology pleases me a lot; I speak about myself, about my experience* ».

- Official conception of teaching: despite of the profound and personal knowledge of Sirine that are issued from her experiential and conceptual already-there. We noticed that she does not kin to an interactive mode of teaching with her students. In fact, she privileges to refer to an official register of knowledge(s) that are taught in a vertical way, through a direct and magisterial transmission situation. She uses a transmission mode of teaching, a referential conceptual, formal and official referential. It seems that this transmissive mode of teaching facilitates her the control of the class: « *I am not satisfied, I should have done better, it was directed, I would have can be due to throw the debate with my students but I have in fear of losing control of the class* ».

The relationship to knowledge of Sirine is particularly problematic, within an ambivalence that makes her declare that she favours to transmit issue problems from her experiential already-there. So that she transmits program and institutional project: *« I did not teach what I wanted to teach, I limited myself to the contents of the lesson, it was simpler for me, I wanted to teach something else to enrich the content, but I had not enough time, ehh...I had to control the class ».*

- The impossible to endure: *« I cannot sustain the irresponsible behaviour of students ».* In effect, Sirine expresses her discomfort towards student disinterest in this discipline « psychology »: *« good, despite the importance of disipline we note unfortunately an average of a disturbing absenteeism, student do not treat things seriously ».* During the after-stroke interview, Sirine carries a feeling of a wicked professional that she occasioned an important pedagogical change when she opted to a transmissive mode of teaching: *« as I was unsatisfied and I was not well. I said: there is something between the lines at the level of students and here I decided to change the transmissive vertical mode of teaching ».* Lina supports badly the irresponsibility of students, their distance in the knowledge and their indifference and recklessness via the taught discipline. This impossible to endure is clear in teacher's answers of student question « out topic »; *« what are you saying? »*; *« you did not understand anything »*; *« it is an hour now I have been speaking and explaining and you have other things that are more important, it is normal that you didn't understand? ».* All these mention the difficulty to imply students within apprenticeship.

## 6. Discussion

Our research inscribed within the didactic clinical framework. It is related to the analysis of teaching practices as deployed in university. The purpose of the present study articulates all around the apprehension of link to knowledge related to experienced university teachers. In fact, it this was verified through the clinical didactic analysis of the impact on their professional experience on their didactic and professional actions.

In the framework of this work, we have proceeded by an analytical step focusing on a qualitative study « case by case » of the teaching practice of two experimented university teachers as a service of a clinical focus on the teaching out of a considered subject teacher (EDIC works). We have tried to identify the revelatory elements of personal and professional experience of two university teachers. It is not to support the idea that experience is a measurable factor, starting from the number of years at work but in the manner or the way that it manifests though the didactic functioning mode. Professional experience develops in parallel with professional career and though the continuous practice of the job.

In this context we find Touboul works (2011), Ben Jomaa and al. (2016) supporting this idea showing that practitioners develop a specific knowledge which is not mentioned neither by institution or by programs. It is designed under the name of « experience knowledge » or the practice knowledge. The latter open the path in front of methods deliberations, personal technics and to meta-analysis situations that favors operative knowledge control.

According to the point of view from which we position ourselves (clinical didactics) the experience will be constructed through practice, personal and professional career. Thereby, the obtained results are sustained by those advanced by Touboul (2011) and according to them; this author notes that the knowledge cannot be used in class without being adapted to pupils and/or to contextual constraints. The acquisition of this knowledge is due to the profession practice and it sent back to problems and to prevention conditions of disfunctionning which can be supervised to knowledge transmission and to class control (didactic anticipation).

We have described the case from a clinical analysis point-of view that it « requires the deepening of the description and of the methodological rigor » (Passeron & Revel, 2005), the didactic mechanisms of two different teaching conceptions and even contrasted (Kember, 1997). The first conception that characterizes the teaching activity of Sirine is called traditional. It is centered on the teacher. It belongs to a magistro-centered or transmissive conception. According to it, the teacher privileges the contents following a teaching model that is essentially transmissive when she delivers the knowledge. The second conception which characterizes the teaching activity of Lina is called pedo-centered. According to this conception teacher, Lina focuses on students accompanying during their apprenticeship and facilitates the knowledge to them with the help of many active methods of pedagogical interactions (Frenay, 2006).

We don't pretend to generalize the results of these two study cases however study case results could show that taking into account the observed subject permit to understand the position of another subject teacher without taking the same form. To start from theoretical « functional » and « transferable » analysers of other cases could feed professional education and could bring in new perspectives.

## **7. Conclusion**

As a conclusion we noted that this analysis leads to treat the subject singularity of the teacher experience in each of them. The analysis of their discourses, of their proper teaching practices that we have carried out allow to study how the experimented university teacher transmit a knowledge echoing to his proper and personal register of knowledges and mobilizes also his proper knowledge, his proper conceptions and his proper relationship to knowledge.



We focused on the involvement of the professional reveal “I” of the professoral action of two experimented university teachers. We are interesting in the teaching process. We were able to put in evidence that teacher’s thinking as well as their teaching conceptions are constructed through their experience and their relationship with the discipline which have an effect on class didactic functioning. In their teaching practice(s), Sirine and Lina seem to be shown « divided » between “proximity and distance”, “pleasure and suffering”. The two teachers are inscribed within ambivalence.

The two « discomfort zone » that reveal notably in their paradoxal relationship to the teaching knowledge are connected to a personal relationship for Lina and an official relationship for Sirine.

Thus, beyond the central interest brought to the subject teacher singularity, this study allows to consider new research perspectives that notably questions an analysis field which remains little explored, unfortunately it proved a « priority » (Altet, 1994) in Tunisia and all over the world as well. In effect this priority corresponds to the institutional will to develop an « effective professional formation » (Altet, op. Cit.) in terms of competences and of professoral challenges of university teachers’ status (Bancel, 1989). Rethink in education issues of university teachers and to be aware of the importance of the continuous formation leading to a professional development of university teachers which is the objective of this study.

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