



Evaluating the impact of differentiated instruction on literacy and reading in mixed ability classrooms: Quality and equity dimensions of education effectiveness



Stavroula Valiandes*

Cyprus Pedagogical Institute, 1 Terpsitheatas Street, 2039 Strovolos, Nicosia, Cyprus

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ABSTRACT

This article presents the findings of a quasi-experimental study that evaluated the effect of differentiated instruction on students' learning, in mixed ability classrooms. Participants in the study were 24 teachers and 479 grade-four elementary students. Results indicate that in classrooms where differentiated instruction methods were systematically employed, students made better progress compared to students in classrooms where differentiated instruction methods were not employed, the family's socioeconomic status did not lead to differentiation in students' achievement and the quality of differentiated teaching had a corresponding effect on students' achievement. Based on these findings, the article discusses the significance of the systematic employment of differentiated instruction methods in mixed ability classrooms for promoting equity, optimization of quality and effectiveness in teaching.

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Introduction

Modern societies call for democratization in all sectors of social life, bringing forward the need for a more egalitarian education, which in turn provides what Lynch and Baker (2005) described as “equality of condition”. Equality of condition refers not only to equality of educational resources, but also to equality of respect and recognition, equality of power, equality of love, care and solidarity (Lynch & Baker, 2005). An education that comforts equality of condition ensures equal access to knowledge, regardless of any differences (socioeconomic, racial, intelligence etc.). Therefore, equality must be seen in a holistic way, promoting simultaneously equity of results and equity of access, treatment and opportunity. Within this context differentiation is the pedagogical mean (Koutselini, 2008; Tomlinson, 2001; Valiandes & Koutselini, 2008, 2009) that supports effective instruction for all students (i.e. Hattie, 2009, 2011; Kyriakides & Creemers, 2008), aiming to transcend inequalities and promote social justice (Koutselini & Agathangelou, 2009). This study presents how the effective employment of differentiated instruction helps toward the promotion for equity for all in mixed ability classrooms.

Differentiated instruction framework

Differentiation is based on the notion of students' “differences” that exist in all classroom settings, mixed ability or streaming. Based on this notion, school achievement cannot be considered as the only difference between students. It is generally accepted that, all classes accommodate students with great differences in various factors i.e. readiness level, learning style, interests, prior knowledge, experiences, socioeconomic status, personality and social skills. Thus, teaching “to the middle” can't meet the multiple and diverse needs and strengths of every student (Haager & Klingner, 2005, p. 19). Acknowledging the mediation needed to handle students' differences effectively, differentiated instruction is considered as the pedagogical approach which “emphasises change of teaching procedures by taking into account the different learning modalities, interests, pace, skills, knowledge and attitudes, of different students” (Koutselini, 2008, p. 2).

Two main presuppositions must be met in order for teachers to begin differentiating their instruction: (a) adequate knowledge of the subject which is to be taught and (b) a very good knowledge of each student's characteristics, needs, strengths and so on. Consequently, the teacher can plan the lesson ahead based on what he/she is up against. Nevertheless, even though planning is an essential component of differentiated instruction, teachers must be ready to dynamically adapt and modify the learning

* Tel.: +357 99635471.

E-mail address: stavroula@valiandes.com

process according to their students' responses. Differentiation is not a recipe to be delivered (Tomlinson, 1999) and cannot be exhausted in the employment of some differentiation techniques and strategies. Differentiation, according to Koutselini, must be seen as a "contextualized teaching and learning experience in the social, cultural and political framework of both, teachers and students, that provides a non technical paradigm of instruction, which contributes to the realization of the equality in education policy." (Koutselini, 2008, p. 4).

Within this context, differentiated instruction nurtures equality of condition not only by focusing on students' educational needs but also by addressing their needs in a holistic way (Valiandes, 2010). George (2005) asserts that, differentiated instruction provides the framework for an instruction which will ensure the future of the Democracy and which will promote higher level quality learning opportunities for all students, by empowering them to become independent and critical thinkers, researchers, professionals etc. To this end, differentiation of instruction is seen as the mode for all students in mixed ability classrooms and it is based on the notion that every student has a "unique biography" (Koutselini, 2006), thus transcending instructional approaches that focus on the ideal, yet non existing, "average level" student, regardless of the student's uniqueness and individual needs (Koutselini & Agathangelou, 2009). By differentiating instruction according to students' level of readiness, interests, and learning style (Landrum & McDuffie, 2010; Murawski & Hughes, 2009; Regan, 2009), teachers can maximize their students' opportunities for learning and personal growth. Consequently, this means taking a big step toward social justice and equity in education (Gamoran & Weinstein, 1995; Koutselini and Agathangelou, 2009; McLaughlin & Talbert, 1993). Within the context of differentiated instruction, equity is the opportunity that all groups of students have in a mixed ability classroom to fulfill the curriculum's goals to the maximum, according to their personal abilities and competences, ensuring thus equal access to knowledge for all. Differentiated instruction seeks to bring quality in education without the creation of differential effectiveness, since differentiation should maximize the effectiveness for all and therefore allow for the attainment of equity.

If we define the quality dimension of educational effectiveness as the supportive and effectual features of instruction provided to all students leading them to high achievement levels, we can assume that the equity dimension is met concomitantly. Willie (2006) found that quality and equity can occur together and can and must be interlinked:

"[E]ducation should focus neither on cultivating excellence at the expense of equity nor on cultivating equity at the expense of excellence. In a well-ordered society, the goal of education is to seek both excellence and equity because they are complementary. One without the other is incomplete" (p.16).

The theory that supports differentiated instruction has greatly impacted teaching all over the world, provoking, therefore, major changes in the ways that teachers envisage and practice teaching. Nevertheless, despite witnessing curriculum designs that promote the implementation of differentiation, (i.e. UK National, Australian Curriculum, Cypriot Curriculum), literature lacks substantial research evidence that documents the effect that differentiation of instruction has on students' learning in mixed ability classrooms (Anderson, 2007; Hall, 2002; Hall, Strangman, & Meyer, 2003).

Until recently, studies examining the impact of differentiation on the quality and effectiveness of instruction had a narrow scope, focusing either on teachers' attitudes and practises (i.e. Blozowich, 2001; Brimijoin, 2002; Johnsen, 2003; Smit & Humpert, 2012; Tomlinson, 2001), or on specific groups of learners, gifted students and students with disabilities (Baumgartner, Lipowski, & Rush,

2003; Geisler, Hessler, Gardner, & Lovelace, 2009; Jones, Yssel, & Grant, 2012; McQuarrie, McRae, & Stack-Cutler, 2008; Rock, Gregg, Ellis, & Gable, 2008; Tieso, 2005). Despite the fact that there are studies documenting the positive effect that differentiation has on student learning in mixed ability classrooms (i.e. Chall, 2000; Chamberlin & Powers, 2010; Gayfer, 1991; Good & Brophy, 2003; Kim, 2005; McAdams, 2001; Pfannenstiel, 1997; Tomlinson, 1999), these are still very few and cannot therefore sustain large scale curricular innovations. Notably, most of the documented research on differentiation consists of small scale research projects, based on a very specific learning focus i.e. reading ability (Jones et al., 2012), learning styles, multiple intelligences (Gangi, 2011) and on certain subject areas, including only small numbers of students for very limited time periods (Baumgartner et al., 2003; Geisler et al., 2009; Tieso, 2005).

Nevertheless, during the last 5 years, there seems to be a shift in the studies and researches that clearly assess and identify the effectiveness of differentiated instruction in various educational settings and subjects. Recent studies on differentiated instruction in Mathematics, both in Secondary School (Muthoni & Mbugua, 2014) and College, revealed the positive effects that differentiated instruction had over students' achievement (Chamberlin & Powers, 2010). Similarly, other studies have shown positive effects of differentiated instruction in middle school inclusive science classes (Simpkins, Mastropieri, Scruggs, 2009) and differentiated instruction based on students' learning style (Landrum & McDuffie, 2010). The growing body of research suggests the importance of differentiated instruction in our era and the emerging need for further investigation that could prove the effective practices of differentiated instruction in mixed ability settings.

Considering the above and particularly taking into account teachers' claims that differentiation is time consuming and difficult to prepare and implement (Corley, 2005; Nunley, 2006; Resnick, 1987), there is still a need for further investigation in the field of differentiated instruction in order to clarify all aspects and issues concerning its implementation in the everyday learning process (Subban, 2006; Tomlinson et al., 2003).

Based on the above, the present study examines the implementation and effectiveness of differentiated instruction for all students and evaluates its potential to bring equity and therefore improve the quality of the learning process. Having in mind the vast research results on educational effectiveness and effective teaching practices (Hattie, 2009, 2011; Hattie & Timperley, 2007; Kyriakides & Creemers, 2008), we primarily need to determine the working definition of differentiation as it will be used in the current study. Thus, differentiation is seen as a contemporary pedagogic framework which acts as an optimum methodological umbrella and at the same time incorporates the basic characteristics of effective teaching, as supported by research (Hattie, 2009, 2011; Kyriakides & Creemers, 2008). More specifically, differentiation (a) is based on goal setting with emphasis on core and worthwhile knowledge, (b) is almost "synonymous" with assessment and systematic feedback (Hattie and Timperley, 2007), (c) is focused on the learning process rather than a mere delivery of content, (d) reconceptualises the role of the teachers requiring that they act as facilitators of learning, providing opportunities for students to act and interact, (e) celebrates students' mistakes and utilizes the mistakes as learning opportunities to construct new knowledge, (f) requires that teachers adapt and alter activities, educational means, materials, learning tasks, learning aims and working pace, and provide opportunities for further and challenging work while maintaining high expectations for all. Based on this dynamic character of differentiated instruction, it is believed that it can provide teachers with a framework for their instruction that ensures both the quality and equity dimensions of effectiveness in mixed ability classrooms. The present study seeks evidence to support the above statement.

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