שאילתה: הוראת מתמטיקה

1.

Educating for sustainability: environmental pledges as part of tertiary pedagogical practice in science teacher education.

Authors:
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Source:
Asia-Pacific Journal of Teacher Education. Jun2017, Vol. 45 Issue 3, p285-301. 17p.
Document Type:
Article

Abstract:
Educating for sustainability has been a key principle underpinning the primary/middle undergraduate teacher education programme at an Australian University for the past decade. Educating for sustainability seeks to provide knowledge and understanding of the physical, biological, and human world, and involves students making decisions about a range of ethical, social, environmental and economic issues, and acting upon them. This study (a part of the ongoing evaluation of our courses) focuses on pre-service teachers (PSTs) who have selected a minor in science and mathematics. Participatory and inclusive learning processes, transdisciplinary collaborations, experiential learning, and the use of local environment and community as learning resources as outlined by Sterling (2001) have formed the basis of much of our practice to develop PSTs' confidence and competence to teach science. This paper explores one pedagogical practice, environmental pledges which the preservice teachers undertook for 15 weeks. The focus is on the impact that undertaking an environmental pledge has had on the personal and professional lives of two groups, first, four cohorts of final-year science and mathematics

pathway PSTs, and second, a small group of early-career teachers who had completed the course in previous years. Data have been collected from final-year science and mathematics students and early-career teachers using ethnographic methods to provide insight into their experiences of using the pledge.

2.

Early Career Elementary Mathematics Teachers' Noticing Related to Language and Language Learners

Turner, Erin Elizabeth; McDuffie, Amy Roth; Sugimoto, Amanda Tori; Stoehr, Kathleen Jablon; Witters, Angela; et al. North American Chapter of the International Group for the Psychology of Mathematics Education, (Nov 3, 2016 - Nov 6, 2016.(

Abstract

There has been limited attention to early career teachers' (ECTs) understandings and practices related to language in teaching and learning mathematics. In this qualitative case study, we drew upon frameworks for teacher noticing to study the language practices of six early career elementary and middle school mathematics teachers. We describe multiple themes that cut across teachers' noticing related to language and language learners, and discuss one theme (i.e., Perspectives on multiple languages) in more detail, including evidence of specific forms of noticing. Implications for teacher education and professional development are discussed

3.

LEARNING AND CULTURE IN THE STUDY OF MATHEMATICS.

Authors:

CHITEŞ, COSTEL1, costelchites@yahoo.com

Source:

Euromentor; Sep2017, Vol. 8 Issue 3, p76-83, 8p
Document Type:
Article

Abstract:

With this article, we set out to highlight the need for mathematics in the spiritual shaping of contemporary man. We focus on the notions and skills that the child acquires during the first years of primary school and that will help shape new notions to be encountered later, during adolescence. Truth, Beauty and Goodness can be supported through mathematics classes. The idea in our article is based both in teaching experience and in data extracted via empirical research that was done on two samples of students, selected from amongst the students of the Faculty of Educational Sciences, as well as alumni of the same. Our idea was shaped from processing the data and the surveys that were handed out: facilitating the teaching of mathematics can be supported by development of rational thought and culture in this field. Teaching mathematics can thus gain popularity and easier accessibility, through the conceiving of a large scale, flexible strategy, both cross curricular and across curricula. In this way we support the idea that creating an adequate culture for students of this field of study is meant to stimulate their epistemic curiosity towards the experiencing and studying of one of the oldest and most complex sciences.

4.

Culture and ideology in mathematics teacher noticing.

Authors:
Louie, Nicole L.1 nlouie@wisc.edu

Source:
Educational Studies in Mathematics. Jan2018, Vol. 97 Issue 1, p55-69. 15p.

Document Type:

Article

Abstract:

This paper responds to the burgeoning literature on mathematics teacher noticing, arguing that its cognitive orientation misses the cultural and ideological dimensions of what and how teachers notice. The author highlights Goodwin's concept of professional vision as a way of bringing analyses of culture and power into studies of teacher noticing. The case of a high school algebra teacher who learned to notice the mathematical strengths of students from marginalized groups is used to illustrate how this might be done. The teacher's noticing involved not only cognitive processes like attending to, interpreting, and deciding how to respond to students' thinking, but also managing dominant ideologies that position students-especially students from non-dominant communities-as mathematically deficient rather than as sense-makers whose ideas should form the basis for further learning. The paper advances the field's capacity for understanding the challenges that teachers face as they attempt to notice in ways that are ambitious as well as equitable.

5.

On Mathematics and Culture: Insights from an International School.

Authors:

Corlu, M. Sencer1

Alapala, Burcu2

Source:

Journal of Humanistic Mathematics. Jan2015, Vol. 5 Issue 1, preceding p223-232. 12p.

Abstract:

We explore the factors that influence the relationship between mathematics and culture in the international school context. First, we share some thoughts about international schools in general and the international mathematics curriculum implemented at the middle grades level at our school in particular. Second, we present some interesting snapshots from our culturally-diverse mathematics classrooms.

6.

Is Academic Engagement the Panacea for Achievement in Mathematics across Racial/Ethnic Groups? Assessing the Role of Teacher Culture.

Authors:

Moller, Stephanie1

Stearns, Elizabeth1

Mickelson, Roslyn Arlin1

Bottia, Martha Cecilia1

Banerjee, Neena2

Source:

Social Forces. Jun2014, Vol. 92 Issue 4, p1513-1544. 32p.

Document Type:

Article

Abstract:

Student engagement with school symbolizes efforts toward learning and is one of the strongest predictors of academic success. However, returns to engagement vary across racial and ethnic groups. Scholars have established that human agency is constrained by organizational environments, but they have not adequately assessed whether the advantages associated with engagement and the disadvantages associated with disengagement accrue evenly to groups of students depending on the educational environment. Using ECLS-K data, we

examine how one aspect of schools' organizational culture–Collective Pedagogical Teacher Culture–moderates the relationship between engagement and mathematics achievement for students of different racial/ethnic groups in elementary school. Our study suggests that exhibiting the attributes that are valued in American society, i.e., academic engagement or, more abstractly, a strong ethic toward working academically, is not sufficient for the mathematics achievement of many students—especially minority youth. Students must study in environments that nourish and capitalize upon those attributes so that diverse students can enhance their academic trajectories. Teachers are critical for student learning, and when teachers perceive the presence of Collective Pedagogical Teacher Cultures, returns to student engagement are higher.

7.

The Culture of Exclusion in Mathematics Education and Its Persistence in Equity-Oriented Teaching.

Authors:
Louie, Nicole L.1 nlouie@wisc.edu

Source:
Journal for Research in Mathematics Education. Nov2017, Vol. 48 Issue 5, p488-519. 32p.
Document Type:
Article

Abstract:
In this article, I investigate the influence of the dominant culture characterizing mathematics education--which I term the culture of exclusion--on efforts to teach for equity. Analyzing a year of observations in an urban high school mathematics department, 1 found that this culture structured everyday instruction even for teachers who

expressed strong commitment to equity and who participated in ongoing equity-oriented professional development. Through their classroom practice, the 4 focal teachers in this study often framed mathematics as a fixed body of knowledge to be received, and they positioned students as deficient, unintentionally excluding many students from rich learning opportunities. However, these teachers also asserted alternatives to the culture of exclusion, showing how resistance to this culture might take shape in everyday mathematics instruction.

8.

The Portrayal of Mathematicians and Mathematics in Popular Culture.

Authors:
Barba, Kimberly1

Source:
Journal of Mathematics Education at Teachers College; Spring2018, Vol. 9 Issue 1, p9-14, 6p
Document Type:
Article

Abstract:
Mathematicians are often inimically portrayed in popular culture, resulting in an abundance of non-mathematical identities in the classroom. Various tropes are propagated by the media that dominate our mental schemas of what makes a mathematician: the eccentric Einsteinlike old man; the young, tortured genius; and the "genetically different"savant. However, these portrayals in popular culture can be used as a tool-rather than a hindrance-if teachers know how to present them properly in the classroom. Although the media often promotes mathematical myths, it can also be used to debunk them.

10.

LEARNING AND CULTURE IN THE STUDY OF MATHEMATICS.

Authors:
CHITEŞ, COSTEL1, costelchites@yahoo.com

Source:
Euromentor; Sep2017, Vol. 8 Issue 3, p76-83, 8p
Document Type:
Article

Abstract:
With this article, we set out to highlight the need for mathematics in the spiritual shaping of contemporary man. We focus on the notions and skills that the child acquires during the first years of primary school and that will help shape new notions to be encountered later, during adolescence. Truth, Beauty and Goodness can be supported through mathematics classes. The idea in our article is based both in teaching experience and in data extracted via empirical research that was done on two samples of students, selected from amongst the students of the Faculty of Educational Sciences, as well as alumni of the same. Our idea was shaped from processing the data and the surveys that were handed out: facilitating the teaching of mathematics can be supported by development of rational thought and culture in this field. Teaching mathematics can thus gain popularity and easier accessibility, through the conceiving of a large scale, flexible strategy, both cross curricular and across curricula. In this way we support the idea that creating an adequate culture for students of this field of study is meant to stimulate their epistemic curiosity towards the experiencing and studying of one of the oldest and most complex sciences.

11.

Teaching as a Second, or Even Third, Career.

Authors:

ELIZABETH OLSON

Source:

New York Times. 9/16/2011, Vol. 160 Issue 55530, p7. 0p.

Document Type:

Article

Abstract:

AT 65, Walt Patteson has two careers behind him and is relishing his third as a high school chemistry teacher. He is one of the retirement-age Americans who are finding new uses for their skills by deciding to teach. As the baby boomers reach retirement age, some of those anticipating a new career are enrolling at community colleges and in state-approved or private programs to convert their professional expertise to the classroom. Even the recent public criticism of teachers and cuts in school budgets have not deterred retirees from getting teaching credentials -- and finding paying jobs, especially in math, science and special education.

12

An Inquiry into the Development of Teacher Identities in STEM Career Changers

Grier, Jeanne M.; Johnston, Carol C.

Journal of Science Teacher Education, v20 n1 p57-75 Feb 2009

National shortages of math and science teachers have led to a variety of strategies and programs to attract second career professionals into teaching. This qualitative study explores the development of professional teaching identities in six STEM career changers in a post-baccalaureate pre-service teacher credential program in California.

Findings suggest the career changers relied upon skills developed in their previous careers to navigate through a new profession; however, returning to the life of a student again was difficult. Additionally, the career changers in this study valued interacting with their traditional aged peers in the program as these relationships were beneficial to their own socialization into teaching as they developed their teacher identities.

13.

The effectiveness and retention of teachers with prior career experience

Abstract

As schools and districts seek to recruit teachers, individuals in non-teaching professions are an appealing possible pool. These potential teachers come with work experience and may have expertise that would serve them well in the classroom. While there has been substantial rhetoric assailing the virtues of teachers with prior professional experience, no research that we know of has assessed the effectiveness of these teachers in terms of student learning. This study uses data from New York City to assess the relative effectiveness and retention of career-switchers. It provides some evidence that these teachers are no more effective than other new teachers, and, in fact, they appear to be less effective at raising math scores of elementary and middle school students. There is little difference in overall transfer or leave rates between teachers with prior experience and other teachers, although career-switchers from college recommended programs do appear more likely to transfer schools.