

## Overcoming social and cultural fragmentation in rural Transylvania: a case study based on the multicultural socialisation of mixed age pupils through a science and technology day

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### Background

The researchers, Davies and Kovács built a relationship with the Headteacher of School X (Hencz) catering for a mixed age range of secondary pupils near Brasov in Transylvania. School X is situated in a small community of approximately 8,500 people comprising in the main three nationalities: Hungarian, Romanian and Roma. The demographics of the community are in the extreme range of poor. The major purpose was to work through and with the teachers (helping to train them) to promote participative and collaborative learning as a means to: a) enable the pupils belonging to the three ethnic groups to work together in mixed social and cultural groups; b) enable the pupils to gain ownership of the learning they were engaged in through the use and development of formative assessment whilst engaged on creative tasks; c) for the teachers to learn and understand how to support and enhance creative learning through working in a mentorship capacity and d) to teach science and technology in participative ways that engage pupils interest and stimulate curiosity. These are not the conditions under which the pupils normally work and relate.

Prior to running a one-day workshop with the students, the authors prepared the teacher by introducing them to participative learning methodologies and inducted them into playing mentorship roles with students, as opposed to the norm of delivering a transmissive form of education. The workshop was constructed around problem-solving in the context of science and technology activities. Our goal was group pupils belonging to different nationalities, so that they were able to work together in teams. To achieve this, pleasant working conditions were manufactured and a happy ethos created to help prevent prejudices and stereotypical reactions building amongst the pupils. Equipment and financial support was provided by a Rotary Club in the UK that enabled the pupils to work in a 'resource rich' environment and to be rewarded positively for their achievements during the day.

### Research Questions

The aim of the research and initial hypothesis

We wanted to analyse the way in which secondary school learners' creativity, logical thinking and discovery skills change as a result of one day's of intervention. We also observed the way in which pupils, who speak different languages and came from different cultures, accept each other through their ability to focus on a common task. The respondents for the research were the pupils of School X. The hypothesis:

- a) Pupils belonging to this particular group of different nationalities can easily overcome normal social and cultural boundaries and socialise through a whole day workshop if the task is interesting, there is a pleasant atmosphere and if some measure of success is assured.
- b) In the case of weaker learners, this type of intervention is more successful compared with the use of traditional educational methods. However, in their case a single intensive intervention regression is a possible outcome.
- c) That working together in positive learning environments can empower Roma pupils to work together with the other ethnic groups.

### Methods

The research methodology

An ethnographic approach was adopted overall but given the intensity of activity and timescale involved in the delivery of the activity an efficient method was devised to gather rich data that allowed

measurement of learning gains during the course of the day. Hence the 'pragmatism of a mixed methods approach was adopted (Newby, 2010, p. 46).

Formally, the outcomes of the class activity were attained in accordance with what is indicated in the literature (Csapó, 1997). Preceding the activity, learners' prior knowledge and skills were evaluated through a diagnostic test (Xpre ). These were followed by an initial 'base-line' survey to eliminate obvious mistakes and individual deficiencies (personal talks, computer based teaching programs etc.) followed by a final survey (Xposzt ).

## **Frame**

1. There were twenty two to fifteen year- old respondents comprising Romanian, Hungarian and Roma nationalities from the School X community.
2. Data gathering:
  - through tests (initial base-line and final testing)
  - interventions during the workshop (qualitative feedback during the cooperative group work)
3. The sequence of events during the workshop:
  - initial creative exercises (numbering sequence, putting a fractional line onto a three-by-three chart that has nine points)
  - interventions (a whole day program consisting of: creative tasks, exercise planning, realisation of the planned tasks in heterogeneous groups, undertaken in a playful but competitive way)
  - Final creative exercises (numbering sequence; animal recognition on the basis of given body parts; drawing shapes with a sequence line; match shift exercise)

Learners worked in groups of two/three during the activities. Each group was of a heterogeneous composition: Romanian, Hungarian and Roma learners, who were previously unknown to each other before. Each group was supported by a teacher or adult supporter (that included international students working in support of the community). Their role was to mentor the group utilising formative assessment strategies. This meant that learners could always ask for help and discuss the tasks. The teachers had been briefed prior to the workshop day on how to perform their role and how to make appropriate interventions. On completion of the workshop a feedback and discussion session took place with the teachers and helpers.

## **Research findings**

Pupils were engaged in a range of higher order learning situations where they were required to use knowledge and skills creatively to produce practical outcomes that were imaginative, functional and that were open to a range of situations where they were judged by peers and others. In so doing the activities were entrepreneurial and required pupils to work together to best effect to produce the best result from a task. The significance of ethnic background faded when the pupils were faced with meaningful challenges where they could all fulfill a role. The teachers saw the significance of working in such ways and became aware of the relevance of using formative assessment to facilitate learning situations such as this through enabling pupils to move into the 'zone of proximal development' (Vygotsky, 1978) through acting as a mentor. As the pupils begin to understand the process and build confidence in it, they engage effectively in mental modeling where they can envisage possible solutions to problems and test them out in their heads (Davies & Elmer, 2001) - then apply the 'techniques' confidently in a wide range of situations

Pupils, teachers and helpers had a fulfilling time but there were interesting variations in individual responses amongst teachers and pupils reflecting the degree that they felt outside their comfort zones.