



Daħla

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Merħba għal din l-eNewsletter tal-MUT Youth Section, l-ewwel harġa għas-sena 2016. F'din l-edizzjoni wieħed isib tliet artikli fuq temi varji.

Nifthu b'sensla ta' ritratti mill-wirja tal-arti li tellajna l-MUTY fix-xahar ta' Novembru 2015. Dawn ir-ritratti huma wkoll akkumpanjati b'kelmtejn minn Ian Coleiro, il-membri tal-MUTY li kien il-moħħ wara din l-inizjattiva. Min-naħa tagħna, ninsabu ferhanin bil-konkorrenza, kemm ta' parteċipanti u viżitaturi u nħarsu 'l quddiem lejn sena oħra meta forsi nkunu nistgħu nergġhu intellġu attivitajiet bħal din.

F'din il-harġa wieħed isib ukoll artiklu miktub minni rigward il-filosofija tal-edukazzjoni tax-xjenza hekk kif minsuġa mill-ħsibijiet ta' akademiċi ġewwa l-Università ta' Malta. Dan hu bbażat fuq xogħol tal-Masters tiegħi li kien inspirat mit-tilwim li deher fil-gazzetti bejn akademiċi min-naħa tal-Fakultà tal-Edukazzjoni u dawk tal-Fakultà tax-Xjenza. Però, il-ħsibijiet ta' dawn il-persuni m'humix limitati għal persuni f'dawn il-karigi u lanqas huma limitati għall-edukazzjoni tax-xjenza biss, iżda juru kif l-edukazzjoni hi politika u immaġinazzjonijiet fiha huma affetwati minn kif inħarsu lejn l-iskop tagħha.

F'din l-edizzjoni nsibu wkoll taqsira ta' artiklu miktub minn Dirk Muscat, Kathleen Bonello, Miram Buġeja, Mariella Galea, Rachel Grech, Elaine Muscat u Pamela Żerafa. Dan johlq paralleliżmu bejn prinċipji fin-National Curriculum Framework lokali u l-filosofija ta' Sergioanni. Jitqanqlu bosta punti li jgħiegluna naħsbu kemm il-prattika fil-postijiet tax-xogħol tagħna taqbel jew tistona ma' dak li hemm miktub fil-kurrikulu nazzjonali. L-importanza tal-kollaborazzjoni bejn l-ghalliem, u l-hin u s-saħħa li għandha tingħata lilhom biex dan isir, huwa fost wieħed minn dawn il-prinċipji.

L-MUT Youth Section tixtieq tilqa' wkoll fi ħdanha lil Leanne Cucciard, li għada kemm issieħbet magħna f'dan il-proġett. Leanne hi għalliem tal-Ġermaniż u ser tkun qed tiegħu ħsieb ir-rappreżentanza tal-MUTY ġewwa l-Kunsill Nazzjonali taż-Żgħażaġh.

Academics' Views of Science Education in Malta

Gilbert John Zahra

University of Malta academics had sounded contradicting arguments once reforms in science education were being discussed (Chetcuti, Pace, & Ventura, 2000; Pace, 2000; Vella, 2000; Lauri, 2012) due to the 1999 National Minimum Curriculum and the 2012 National Curriculum Framework, a dispute which had led to an interfaculty meeting between the Faculty of Education and Faculty of Science at the University of Malta. In addition, following this, a member of each group pursued the argument in the House of Representatives in 2001 and 2002 until some sort of convergence was reached (Mizzi, 2005). The aim of my dissertation was to analyse academics' views on science education.

Two focus groups consisting of five individuals from each faculty were set up. After meeting the focus groups for a first time, views were compared and new questions constructed for a second round of focus groups. This methodology was termed 'spiralling focus groups'.

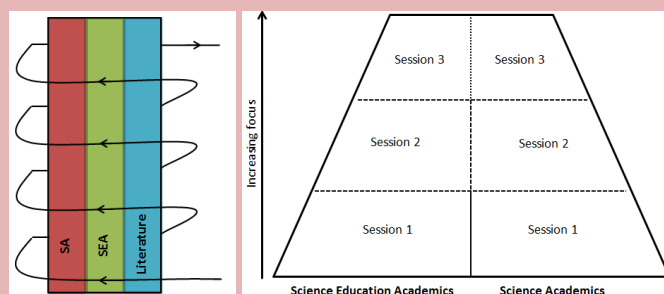


Figure 1: 'Spiralling' Focus Groups (Zahra, 2015, p.26)

From the focus groups it was easy to note that none of the groups were unified under one idea; there are more similarities between members of different faculties and more differences between members of the same faculty than expected. Thus, rather than having two opposing views, one for science and one for science education academics, views were placed along a spectrum with particular individuals being repeatedly placed on opposing poles. These were the most vociferous focus group members and the ones to have featured more prominently in the media.

Participants from all groups agreed that as "modern society is based on science" we cannot "afford to have people who are not literate in science". This argument has resurfaced in modern times after the 1985 Bodmer report. When it came to explaining what being science literate means, however, participants' views were seen as lying along a spectrum reminiscent of the move from a Public Understanding of Science (PUS) model of science literacy to a Public Engagement with Science and Technology (PEST) model (Figure 2 on page 3). While a PUS model portrays people as deficit of the science knowledge required to make informed choices, a PEST model is more egalitarian, values public dialogue, and involves a shift away from filling people with abstract content (Fisher, 2011; Druce, 2013; Schäfer, 2009).

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Novembru / Diċembru 2015 – L-Esebizzjoni tal-

Arti

Ian Karl Coleiro

Lejn l-aħħar tas-sena li għaddiet għalqet l-esebizzjoni tal-arti organizzata mis-Sezzjoni taż-Żgħażaġh tal-MUT. Ta' min nibda' l-ewwel billi nirrigrazzja lil kull min kien ta' għajjnuna, speċjalment lill-President tal-MUT Kevin Bonello, lill-Viċi President Marco Bonnici, lis-Segretarju Amministrattiv Frank Mallia, lis-Segretarju Ġenerali Franklin Barbara u l-Uffiċjal tal-Komunikazzjoni Antonio Olivari tal-għajjnuna u s-sapport kollhu provdut. Finalment ma nistax ma nsemmix ukoll lis-Sistina Art Shop, tal-isponsor tagħhom.

Personalment nemmen li din l-esebizzjoni kienet suċċess, għas-sempliċi raġuni li l-andament u r-riżultati li ntlahqu bis-saħħa ta' din l-esebizzjoni kienu konsiderevoli. Dan il-għaliex offrejna l-opportunità lil sensiela ta' artisti, kemm uħud li huma diġà stabbiliti, kif ukoll oħrajn godda għax-xena artisitka, sabiex jesebixxu xogħolhom fil-pubbliku. Għażilna xogħol ta' kwalità għolja u ppruvajna nżommu l-għażla tagħna fuq xogħol ta' natura artistika varjata, kif ukoll iddeċidejna li ninkludu xogħol ta' parteċipanti li gejjin minn oqsma diversi tal-arti. Il-parteċipanti tagħna varjaw minn għalliema tal-Arti Klassikà u studenti tal-'Fine Arts' tal-Università ta' Malta, sa Espressionisti 'Punk' Post-Moderni u prattikanti tal-arti bħala delizzju. Dan l-ambjent varjat b'hekk offra l-opportunità lil dawn il-prattikanti li jiltaqgħu u li jiġu esposti għal artisti u għal xogħol ta' natura differenti minn dak li kienu mdorrija huma bih, sabiex b'hekk jkunu jistgħu jimmaturaw bħala individwi u jtejb u t-talenti artistiki tagħhom.

Nikkonkludi dan il-ħsieb qasir billi nwiegħed lill-qarrejja kollha li attivitajiet simili ta' din ma jdumux ma jerġgħu jiġu organizzati u naċċertawkom li bħala Sezzjoni taż-Żgħażaġh tal-MUT nerġgħu nagħmlu dak kollu li nistgħu sabiex kull min ikun involut johroġ sodisfatt u ħerqan għal attivitajiet oħra li tista' tohloq is-Sezzjoni taż-Żgħażaġh tal-MUT.



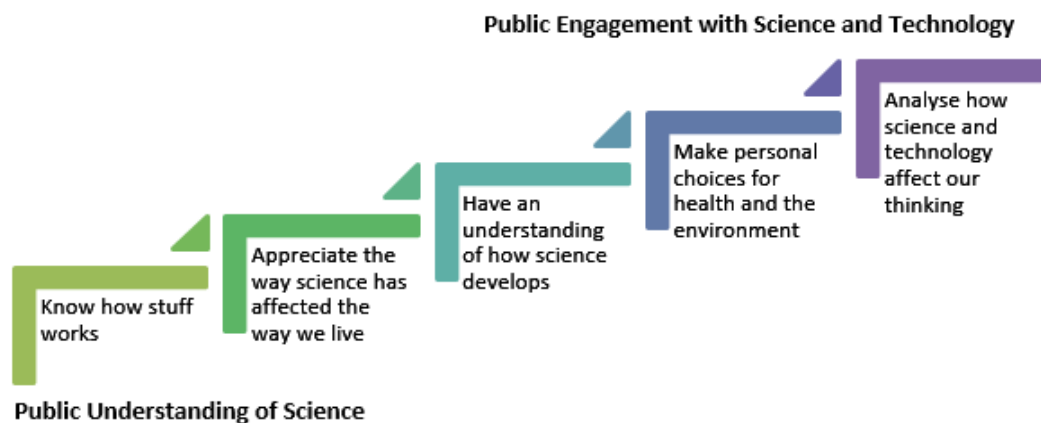


Figure 2: Science Literacy as a Spectrum of Abilities (Zahra, 2015 p.83)

A brief analysis of the Hallmarks of a Learning Community as drawn by Sergiovanni within a Maltese Context

Abridged by Dirk Muscat and Gilbert John Zahra from an original collaboration by Kathleen Bonello, Miram Bugeja, Mariella Galea, Rachel Grech, Dirk Muscat, Elaine Muscat and Pamela Zerafa.

An important consideration that emerged from the consultation process of the National Curriculum Framework for All (2012) was that education should not be limited to knowledge and content but it should instil in our students a “value system that reflects the moral and ethnic fibre of a Maltese and European citizen”. The NCF (2012) identifies six principles – Entitlement, Diversity, Continuum of Achievement, Learner Centred Learning, Quality Assurance and Teacher Professional Support – through which education can achieve this. These principles form a striking parallel with the Hallmarks of a Learning Community as drawn by Sergiovanni (2006). Here we try to integrate these two documents and contextualise what Sergiovanni (2006) explains for our local realities.

The Principle of Entitlement

Within the NCF (2012), the principle of Entitlement connects the concepts of a thorough and lifelong development “with a value system of a responsible and engaged citizen” (p.5). Adjacent to this notion are the thoughts of Sergiovanni (2006) who argues that instructional and organizational coherence are important to ensure continuity, progression and meaningfulness of the whole educational experience. Thus, as part of learning institutions’ mission statement, every student’s entitlement to access a broad, relevant, interesting and personalised curriculum which enables him/her to reach optimum potential through active engagement, equality of opportunity, choice and different learning approaches should be included. This is indeed the paradigm shift the NCF (2012) is proposing together with the LOF approach; shifting our focus to the learner and learning.



For this reform to be implemented, “the concept of community as the metaphor for schooling” (Sergiovanni, 2006, p. 122) needs to be embraced. “Schools struggle to become communities”, however, particularly because relationships and collegiality are faint. To avoid this and achieve “gemeinschaft”, stronger connections have to be made with educational leaders leading by example; not being afraid of challenges, creativity, evaluations and criticism – be it from the system, their colleagues or themselves. In so doing, their learners may then develop their own competences “to lead, to challenge, to analyse, to be innovative and creative, and to accommodate for and acquire new skills and knowledge” (NCF, 2012, p.5). Stakeholders could stop here to ponder what is needed in schools and in the status of the teaching profession to facilitate such change.

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(Continued...) Academics’ Views of Science Education in Malta

These differences affect how one imagines science to be presented in schools. At the PUS end, scientific knowledge and ‘thinking like scientists’ to make ‘correct’ choices are important. On the other end, understanding how scientific inquiry is conducted so that people can question science and use it intelligibly is favoured. While one end favours knowledge of science content, the other favours knowledge about scientific reasoning. One model uses hands-on teaching to demonstrate the grandeur of science, and the other to show how it is done, its strengths, but also its weaknesses.

In actual fact, participants could not even agree on a definition of science. While some view it as a rigid collection of facts collected through the scientific method, others argue that the scientific method is a myth and what constitutes scientific knowledge cannot be clearly defined. While at one end science is the best way of knowing, perceiving those forms of knowledge where observations and “numbers don’t (...) turn around easily” as “more intractable”, others argue that complete objectivity is a myth, that science cannot be clearly distinguished from other ways of knowing to which it is neither superior nor inferior.

These ideas have contrasting implications for the two main types of science students, i.e. the prospective science specialist and the non-science-oriented. Academics believing that science can be clearly defined and separated from other subjects argue that science should not be “vulgarised (for ...) those who don’t cope”. They believe that these should be presented with “dumbed-down” science concepts in a feat of trying “to give those as much as they can hold”. On the other hand, other academics criticised this way of thinking and deemed it appalling to argue that “this is science, if you fit in it, you’re a scientist, if you don’t fit in it, you’re not cut out to do science”. In line with humanist discourses of science education (Young & Muller, 2010; Young, 2012), they held that science can be reached by all students if it is made relevant and accessible. They argued that everyone needs an understanding of science for meaningful social inclusion.

This dissertation serves to remind one that education is political (Freire, 1972) and can be targeted at conflicting aims (Schultz, 2009; Adamson & Morris, 2007; Magalhães & Stoer, 2006). Science education is not different – It can have a multitude of aims and has been subject to several discourses for reforms (Schultz, 2009; DeBoer, 2000; Hurd, 1995; Bybee, 1995). The figure below outlines how I view this divide, although a more detailed analysis and explanation can be found in my dissertation.

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(Continued...) A brief analysis of the Hallmarks of a Learning Community as drawn by Sergiovanni within a Maltese Context

Principle of Diversity

"It is the right of every citizen of the Republic of Malta to receive education and instruction without any distinction."

(Education Act as Amended, 2006, p.4).

This emphasis on education for all is due to the impact of the Salamanca Statement (UNESCO, 1994) which called for a policy shift requiring all schools to become inclusive ones serving all children. The statement reaffirmed that every child has the right to education, the system and programs of which should thus be designed to take into consideration the diverse characteristics and needs of students through creating welcoming environments at school. Malta, it being a signatory of the Salamanca Statement (p. 47), was asked to create such inclusive communities where differences are brought together "into a mutually respective whole" (Sergiovanni, 2006, p.104) and this features as one of the main tenets of the current curriculum (NCF, 2012). This involves a whole school approach (Frederick, 2005) which entails three inter-connected dimensions of a school, namely culture, policies and practices (Ainscow, 1999) and where all stakeholders feel empowered to focus on the commitments they have towards the collective. This implies that craft knowledge is appreciated, shared and developed. Also, genuine collegiality, as opposed to more contrived forms, is fostered in face-to-face settings and space and time allocated for all members of the school community to meet, think and discuss shared values, beliefs and practice which are relevant and "meaningful in their lives" (Sergiovanni, 2006, p.103). It is these values and purposes that determine and connects initiatives, as Sergiovanni (2006) explains through his concept of the social covenant.



Principle of Continuum of achievement

Another important tenet upon which the NCF (2012) has been drawn up is the principle of continuum of achievement. It stresses that education should allow all learners to access, engage, evaluate and improve their own learning by providing multiple access points and paths to learning. As students have diverse needs and levels of development, schools should provide adequate support systems in order to maximise each learner's level of engagement and achievement in learning. Noddings (1992) suggests that students with different capabilities may be reached by providing various equally prestigious specialised programmes, thus ensuring continuity in curriculum.

The NCF outlines the need to have linked curricula which promote continuity, differentiated learning outcomes, and formative forms of assessment. This notion resonates with the first two Principles of Learning (Sergiovanni, 2006, p. 218) wherein schools should be organised for "effort-based learning by assuming that under the right conditions all students can learn. These effort-based conditions include persistence by students and the provision of support by the school for every learner". Expected standards and possible pathways for improvement should be made known to students so that they may be active agents of their own learning. Personalization of learning, in this manner, can serve to maximise and improve student learning (Sergiovanni, 2006, p. 122). It is through the presence of a community that these factors or antecedents (Sergiovanni, 2006) are most likely to be fulfilled.

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(Continued...) Academics' Views of Science Education in Malta

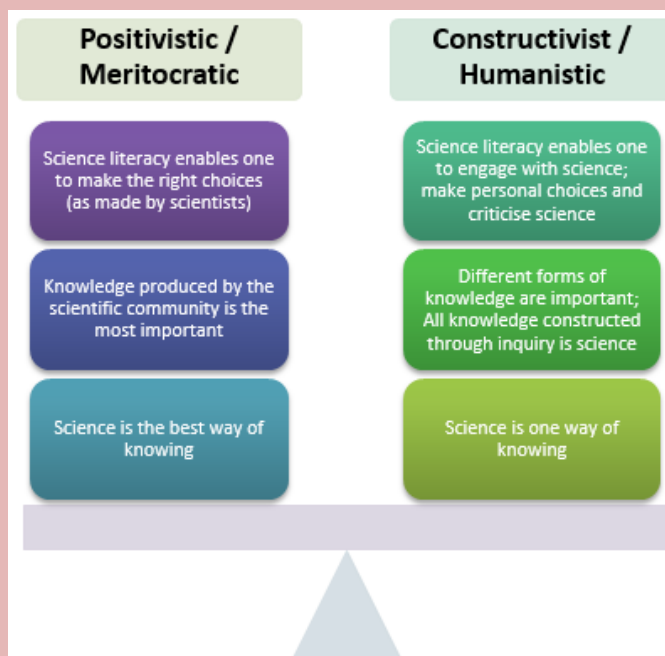


Figure 3: Opposing views of Science and Science Education (Zahra, 2015 p.132)

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References

- Adamson, B., & Morris, P. (2007). Comparing Curricula. In: M. Bray, B. Adamson & M. Mason (Eds). *Comparative Education Research: Approaches and Methods* (pp.263-282). Hong Kong: CERC & Springer.
- Bodmer, W. F. et al. (1985). *The Public Understanding of Science*. London: The Royal Society.
- Bybee, R. W. (1995). Science Curriculum Reform in the United States. In R. W. Bybee & J. D. McInerney (Eds), *Redesigning the Science Curriculum: A Report on the Implications of Standards and Benchmarks for Science Education* (pp.12-20). United States of America: Biological Sciences Curriculum Study.
- Chetcuti, D., Pace, P., & Ventura, F. (2000, Aug 13). Reforming science education: the need for co-ordinated science. *The Sunday Times*.
- DeBoer, G. E. (2000). Scientific Literacy: Another Look at Its Historical and Contemporary Meanings and Its Relationship to Science Education Reform. *Journal of Research in Science Teaching*, 37(6), 582-601. Retrieved from http://web.nmsu.edu/~susanbro/eced440/docs/scientific_literacy_another_look.pdf
- Druce, V. (2013, May 8). Should science education be compulsory? *Refractive Index*. Retrieved from <http://refractiveindex.wordpress.com/2013/05/08/should-science-education-be-compulsory/>
- Fisher, E. (2011). Public science and technology scholars: Engaging whom? [Editorial]. *Science and Engineering Ethics*, 17(4), 607-620. DOI 10.1007/s11948-011-9331-x
- Freire, P. (1972). Education: domestication of liberation? *Prospects*, 2(2), 173-181. Retrieved from http://acervo.paulofreire.org:8080/ispui/bitstream/7891/1104/3/FPF_OPF_01_0022.pdf
- Hurd, P. D. (1995). Reinventing the Science Curriculum: Historical Reflections and new Directions. In R. W. Bybee & J. D. McInerney (Eds), *Redesigning the Science Curriculum: A Report on the Implications of Standards and Benchmarks for Science Education* (pp.1-11). United States of America: Biological Sciences Curriculum Study.
- Lauri, J. (2012, Mar 25). Science vision in the dark? *The Times of Malta*. Retrieved from <http://www.timesofmalta.com/articles/view/20120325/education/Science-vision-in-the-dark-412562>
- Magalhães, A. M. & Stoer, S. R. (2006). Knowledge in the Bazaar: Pro-active Citizenship in the Learning Society. In R. G. Sultana & M. Kuhn (Eds), *Homo Sapiens Europæ? Creating the European Learning Citizen* (pp. 83-103). New York: Peter Lang.
- Mizzi, D. (2005). *Co-ordinated Science in the Secondary School: A Case Study of a Curriculum Development Process* (Unpublished M.Ed. dissertation). University of Malta, Malta.
- Pace, P. (2000, Jul 16). Co-ordinated science: dispelling fear with reasons. *The Sunday Times*.
- Schäfer, M. S. (2009). From public understanding to public engagement: An empirical assessment of changes in science coverage. *Science Communication*, 30(4), 475-505. DOI: 10.1177/1075547008326943
- Schultz, R. M. (2009). Reforming Science Education: Part 1. The Search for a Philosophy of Science Education. *Science & Education*, 18(3-4), 225-249. DOI: 10.1007/s11191-008-9167-1.
- Vella, A. J. (2000, Jul 2). Co-ordinate science and the future of science education in Malta. *The Sunday Times*.
- Young, M. & Muller, J. (2010). Three educational scenarios for the future: lessons from the sociology of knowledge. *European Journal of Education*, 45(1), 11-27.
- Young, M. (2012). Education, globalization and the 'voice of knowledge'. In D. W. Livingstone & D. Guile (Eds), *The Knowledge Economy and Lifelong Learning: A Critical Reader* (pp. 335-347). Rotterdam, The Netherlands: Sense Publishers.
- Zahra, G. J. (2015). *Views of Science Education in Malta: A Constructed Discourse between Academics of Science and Science Education*. (Unpublished M.A. Dissertation). Euro-Mediterranean Centre for Educational Research, University of Malta.

(Continued...) A brief analysis of the Hallmarks of a Learning Community as drawn by Sergiovanni within a Maltese Context

Learner-centred learning

While the NCF (2012) presents the principle of learning from a pedagogical perspective, Sergiovanni (2006) argues that when both students and teachers are connected to their school and its goals, student learning is bound to ensue. Committed teachers demonstrate personalisation, a measure of how much a student matters for his teacher. A teacher who believes in a more learner-centred approach to learning is aware of where the student is, where the student needs to go and facilitates the student's next step by scaffolding the learning process accordingly. However, for Sergiovanni (2006), personalisation goes beyond that; in a moral community, personalisation implies that a teacher genuinely cares for the students' wellbeing and welfare which he insists is key to ensure connections that, in turn, pave the way for meaningful learning.

Nodding in 'The Challenge to Care in Schools' (1992) and the National Association of Secondary School Principal's report Breaking Ranks II: Strategies for Leading High School Reform present a number of recommendations where, especially in large schools, teachers should remain with the same students for three or more years to get to know each other better and build a caring, stronger and trusting relationship. Further enhancing a sense of community is possible if schools are split into smaller units and students stay in the same school long enough to develop a sense of belonging. How does this suggestion resonate with the recent reformulation of state secondary schools?

Principle of Quality Assurance

"In successful schools community and capacity go together" (Sergiovanni, 2006, p.118). Building internal capacity is critical to maintain high standards and this can only be supported through internal, rather than external, reviews. Sergiovanni (2006) argues that "any effort designed to improve student quality as a means to increase student learning must also include leadership in its equation" (p.119). In fact, in Malta, internal reviews through school development planning started to evolve in 1997 where for the first time, we started seeing the Heads' participation in school planning (Knowing Our Schools, 2004) and due importance given to quality assurance.

Quality assurance has become one of the central topics in the context of recent educational reforms where it seems that the concept of building internal capacity and learning communities is being presented as 'a means of promoting school and system wide capacity building' (Bolam et al., 2005:10). The intention of introducing colleges, was to move away from a highly centralised and bureaucratic system to a wider participative and collaborative strategy among stakeholders (Bezzina, 2006, p.160). This vision aimed to empower members of staff in educational decision-making to determine the way forward and develop schools as learning organisations (Ibid., p.160). One questions whether these aims have been achieved.

Quality assurance should be seen as an adherence to measurable standards and outcomes not as intrusive and degrading (NCF, 2012) and thus methodologies adopted should provide constructive feedback whilst also reflect good practice existing in schools. Once internal reviews become an intrinsic part of school culture, evaluation, feedback and change become a natural part of the daily life of all the stakeholders involved.

Principle of Teacher Professional Support

The role and function of schools are changing and so is what are teacher expectations. No matter how good pre-service training is, it cannot be expected to prepare teachers for all the challenges they will face throughout their careers. Education systems therefore seek to provide teachers with opportunities for in-service professional development in order to maintain a high standard of teaching and to retain a high-quality teacher workforce.

This philosophy provides the backdrop of a culture change in which training and continued professional development are seen as key priorities which policymakers (including MEDE, the DQSE and the Malta Union of Teachers) need to strive towards. Taking into consideration the needs of the individuals (Shriki & Lavy, 2008), teachers need time to discuss, plan and share best practices to achieve excellence in the teaching they provide (Musset, 2010). The key is to avoid contriving but instead opt for empowering and encouraging commitment towards developing inquiring communities which enable teachers to collectively reflect on their practices, seek solutions to problems that arise and help them develop a single shared practice of teaching. Such a community is conducive to ensuring commitment to professional development and provides a sound foundation for change (Wenger, 1998).

References

- Ainscow M. (1999). Understanding the development of inclusive education system. *Electronic Journal of Research and Educational Psychology*, Vol. 3(3) N. 7. pp 5-20.
- Bezzina, C. (2006). The Road Less Travelled: Professional Communities in Secondary Schools. *Theory into Practice*, 45(2), 159-167.
- Bolam R. et al. (2005). Professional Learning Communities: A Review of the Literature. *Journal of Educational Change* 7:221–258
- Frederick, K. (2005). Let's take the special out of special needs. In *Times Educational Supplement*, 17(7), 19.
- Malta Government Publication. (2006) Amended Education Act. Malta: Government Printing Press.
- Ministry of Education and Employment (2012). *The National Curriculum Framework for All*. Salesian Press, Malta.
- Musset, P. (2010). Initial Teacher Education and Continuing Training Policies in a Comparative Perspective: Current Practices in OECD Countries and a Literature Review on Potential Effects. *OECD Education Working Papers*, No. 48, OECD Publishing.
- Noddings N. (1992). The Challenge to Care in Schools. In Sergiovanni T.J. *The Principalship: A Reflective Perspective* (pp 103-125) Pearson
- Sergiovanni T. J. (2006). The School as a Moral Community. In *The Principalship: A Reflective Perspective. 6th Edition*. Pearson, pp 103-125.
- Shriki, A., & Lavy, I., (2008), Teachers as Partners for Designing Professional Development Programs. Available online at: http://mes5.learning.aau.dk/Papers/Shriki_Lavy.pdf
- UNESCO (1994). The Salamanca Statement And Framework For Action On Special Needs Education. Adopted By The World Conference On Special Needs Education: Access And Quality. Salamanca, Spain, 7-10 June. U'. 2014. Print.
- Wenger, E., (1998), Communities of practice: Learning, meaning and identity. Cambridge: University Press.