

could stem from social problems whose solutions do not necessarily lie in the way the subject is taught.

6. Conclusion

The study findings indicate that many academically marginalized students can participate in science classes with benefit if the teaching builds on a clear progression of core academic material, clear goals and continual feedback. Teachers can explain material to academically marginalized students through direct contact with the subject matter, fieldwork or hands-on work as well as work with the various forms of subject representation. Experiments showed that the structural organization and scaffolding of the inquiry-based classroom are crucial factors in enabling marginalized students to participate and gain a learning outcome from the activities. Observations show, and many of the marginalized students report, that benefit from hands-on activities when they are carefully contextualized, integrated and scaffolded in the classroom as well as in the field.

However, more research is required to include more students in the science classroom. There is no universal solution, but a continuous cooperation between subject-specific teachers and teachers with a special education background as regards the identification and testing of new ways of meeting marginalized students in the classroom contributes to the development of inclusive practices in science teaching.

7. References

- [1] Patchen, T. and Cox-Petersen, A. (2008) "Constructing Cultural Relevance in Science: A Case Study of Two Elementary Teachers". *Science Education* 92, (6), pp. 994-1014.
- [2] Jackson, J. and Ash, Q. (2012) "Achievement for All: Improving Science Performance and Closing Achievement Gaps", *Journal of Science Teacher Education* 23 (7), pp. 723-744.
- [3] Southerland S. et al. (2011) "Examining Teachers' Hurdles to "Science for All"", *International Journal of Science Education* 33 (16), pp. 2183-2213.
- [4] McGinnis, J.R. (2013) "Teaching Science to Learners with Special Needs", *Theory Into Practice* 52 (1), pp. 43-50.
- [5] Watt, S. J. et al. (2013) "Promoting Inclusive Practices in Inquiry-Based Science Classrooms", *TEACHING Exceptional Children* 45 (4), pp. 40-48.
- [6] Angelides, P. et al (2008) "The Implementation of a Collaborative Action Research Programme for Developing Inclusive Practices: Social Learning in Small Internal Networks", *Educational Action Research* (4), pp. 557-568.
- [7] Wenger, Etienne (1998) *Communities of practice: learning, meaning, and identity*, Cambridge University Press.
- [8] Mørck, L.L. (2007) "Young ethnic minorities in education: How to expand possibilities for learning and transcending marginalization", In *Citizen City*. Canada: Captus University Publications, pp. 149-159.
- [9] Alenkær, R (2010), *AKT ink. Inkluderende AKT-arbejde i folkeskolen*. Dafolo.
- [10] Eik, C. J. (2012) "Use of the Outdoor Classroom and Nature-Study to support Science and Literacy Learning: A Narrative Case Study of a Third-Grade Classroom", *J Sci Teacher Educ* (23), pp. 789-803.
- [11] Østergaard, C. et al. (2014) *Inkluderende læringsmiljøer i udeskole. Et forskningsprojekt om brug af udeskole til at optimere faglig og social inklusion af elever*, *NORDPRO*, 23.-24. oktober 2014.