

LITERATUURLYS:

- AEC (Australian Education Council), 1994. *Science – a curriculum profile for Australian schools*. Carlton: Curriculum Corporation.
- Altrichter, H., Kemmis, S. McTaggart, R. & Zuber-Skerritt, O. 1991. Defining, confining or refining action research? In Zuber-Skerritt, O. (Ed.). *Action research for change and development*. Aldershot/Brookfield: Avebury. (pp. 3-9).
- Alvesson, M. & Sköldberg, K. 2000. *Reflexive methodology: New vistas for qualitative research*. London: Sage Publications.
- Anderson, A. 1993. Assessment: A means to empower children? In Webb, N.L. (Ed.). *Assessment in the mathematics classroom*. Virginia: The National Council of Teachers of Mathematics. (pp. 103-110).
- Arter, J.A. & Spandel, V. 1992. Using portfolios of student work in instruction and assessment. *Educational Measurement Issues and Practice*, 36-44.
- Atkinson, P., Coffey, A., Dalamont, S., Lofland, J. & Lofland, L. 2001. *Handbook of ethnography*. London: Sage Publication.
- Ausubel, D.P. 1968. *Educational psychology: A cognitive view*. New York: Holt, Rinehart & Winston.
- Barr, R.B. 1998. Obstacles to implementing the learning paradigm – what it takes to overcome them? *About Campus*: 18-25.
- Bassey, M. 1995. *Creating education through research*. Newark: Kirklington Press.
- Baxter, G.P., Shavelson, R.J., Herman, S.J., Brown, K.A. & Valadez, J.R. 1993. Mathematics performance assessment: Technical quality and diverse student impact. *Journal for Research in Mathematics Education*, 24(3): 190-216.
- Bell, J. 1987. *Doing your research project: A guide for first-time researchers in education and social science*. Milton Keynes: Open University Press.
- Beth, E.W. & Piaget, J. 1966. *Mathematical epistemology and psychology*. Dordrecht: Reidel.
- Beylefeld, A.A. 2002. Integration and assessment of critical outcomes in a learning programme for first-year medical students. Unpublished doctoral thesis. Bloemfontein: University of the Free State.

- Bezuidenhout, C. 2003. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Bigge, M.L. & Shermis, S.S. 2004. *Learning theories for teachers*. (6th edition). Boston: Pearson Education Inc.
- Biggs, J. 1996. Assessing learning quality: Reconciling institutional, staff and educational demands. *Assessment and Evaluation in Higher Education*, 21(1): 5-16.
- Bishop, A.J. 1991. *Mathematical enculturation*. Dordrecht, the Netherlands: Kluwer Academic Publishers.
- Bloom, B.S. 1976. *Human characteristics and school learning*. New York: McGraw-Hill.
- Bonano, H. Jones, J. & English, L. 1998. Improving group satisfaction: Making groups work in an undergraduate course. *Teaching in Higher Education*, 3(3): 365-383.
- Boshee, F. & Baron, M.A. 1994. OBE: Some answers for the uninitiated. *The Clearing House*, 67(4): 193-196.
- Boud, D. 1990. Assessment and the promotion of academic values. *Studies in Higher Education*, 15(1): 101-111.
- Boud, D. 1995. *Enhancing learning through self assessment*. London: Kogan Page.
- Bowden, J.A. 1990. Curriculum development for conceptual change learning: A phenomenographic pedagogy. Occasional paper 90.3. ERADU, RMIT: Victoria University of Technology.
- Brockett, R.G. (Ed.). 1988. *Ethical issues in adult education*. New York: Teachers College Press.
- Brown, C.A. 1986. A study of the socialisation to teaching of a beginning secondary mathematics teacher. In Burton, L. & Hoyles, C. (Eds). *Proceedings of PME-10*. London: University of London Institute of Education. (pp. 336-341).
- Brown, G., Bull, J. & Pendlebury, M. 1997. *Assessing student learning in higher education*. London: Routledge.
- Brown, S. & Knight, P. 1984. *Assessing learners in higher education*. London: Kogan Page.

- Buono, A.R. & Bowditch, J.L. 1989. *The human side of mergers and acquisitions: Managing collisions between people, cultures and organisations*. San Francisco: Jossey Bass.
- Cangelosi, J. S. 1990. *Evaluating student achievement*. New York: Longman.
- Cherkas, B.M. 1992. A personal essay in maths? *College Teaching*, 40(3): 83-86.
- Christie, P. 1999. OBE and unfolding trajectories: Lessons to be learned. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 279-292).
- Coetzee, D. & Le Roux, A. 2001. The challenge of quality and relevance in South African education: A philosophical perspective. *South African Journal of Education*, 21(1): 208-212.
- Cohen, J. 1988. *Statistical power analysis for behavioural sciences*. (2nd edition). New Jersey: Erlbaum.
- Cohen, L. & Manion, L. 1980. *Research methods in education*. (3rd edition). London: Routledge.
- Cohen, L. & Manion, L. 1994. *Research methods in education* (4th edition). London: Routledge.
- Cohen, L., Manion, L. & Morrison, K. 2000. *Research methods in education* (5th edition). London: Routledge.
- Coffey, A. 1999. *The ethnographic self*. London: Sage publications.
- Collison, J. 1992. Using performance assessment to determine mathematical dispositions. *Arithmetic Teacher*, 39(6): 40-47.
- Coombe, C. Inligting aan C.J. Louw verskaf deur J.G. Maree gedurende 2003.
- Cooney, T.J. 1985. A beginning teacher's view of problem solving. *Journal for Research in Mathematics Education*, 16(5): 324-336.
- Dadds, M. 1995. *Passionate enquiry and school development: A story about teacher action research*. London: Falmer Press.
- Darkenwald, G.G. & Merriam, S.B. 1982: *Adult education, foundations of practice*. New York: Harper and Row Publishers.
- Daugherty, A. 1996. Total quality education. *Contemporary education*, 67: 83-87.

- Davis, G. & Mcleod, N. 1996. Teaching large classes: The silver lining. *HERDSA News*, 18(1):3-6;(2):5-12.
- Denzin, N.K. & Lincoln, Y.S. (Eds). 1994. *Handbook of qualitative research*. London: Sage Publications.
- Department of Education (DoE) 1997a. Curriculum 2005. Lifelong Learning for the 21st century. Pretoria: Department of Education.
- Department of Education (DoE) 1997b. Towards a policy framework for assessment in the general and further education and training phases in South Africa. Discussion document. Pretoria: Government Printer.
- Department of Education (DoE) 1998. The National Assessment policy in the General Education and training Band Grade R to 9 and ABET. Pretoria: Government Gazette, Vol 402, No. 19640.
- Department of Education (DoE) 2002a. Curriculum 2005: Assessment guidelines MLMMS: Senior Phase. Pretoria: Department of Education.
- Department of Education (DoE) 2002b. CASS Portfolio: Wiskunde. Pretoria: Staatsdrukker.
- Department of Education (DoE) 2002d. Revised National Curriculum Statement Grades R-9 (Schools): Mathematics. Pretoria: Department of Education.
- De Vries, A. 17.07.2005. SA skole 'sal só moet herskik, herbeplan'. *Rapport*. 6.
- De Vries, A. 17.07.2005. Provinsies se laer begrotings vir onderwys 'kwel'. *Rapport*. 6.
- Dick, B. 2000. Postgraduate programs using action research. In Zuber-Skerritt, O. *Action learning, action research and process management: Theory, practice, praxis*. Brisbane: Griffith University. (pp. 67-83).
- Dixon-Krauss, L. 1996. *Vygotski in the classroom*. New York: Longman.
- Driscoll, M.P. 2000. *Psychology of learning for instruction*. Boston: Allyn and Bacon.
- Durandt, R. 2002. Uitdagings van uitkomsgebaseerde onderwysvir die bestuur van die wiskundeklaskamer. Ongepubliseerde M.Ed-verhandeling. Johannesburg. Randse Afrikaanse universiteit.

- Du Toit, G.F & Du Toit, E.R. 2004. Understanding outcomes-based education (OBE). In Maree, J.G. & Fraser, W.J. (Eds). *Outcomes-based assessment*. Cape Town: Heineman. (pp. 1-27).
- Du Toit, H.G. 2004. Die effektiwiteit van die skoolondersteuningspan vir onderrig en leer binne die inklusiewe onderwysstelsel. Ongepubliseerde navorsingsvoorstel. Pretoria: Universiteit van Pretoria.
- Ebbutt, D. & Elliott, J. 1985. *Issues in teaching for understanding*. York: Longman.
- Ebel, R. 1997. The 'essentials' of educational measurement. In Lubisi, Wedekind, Parker & Gultig (Eds). *Understanding outcomes-based education. Reader*. Johannesburg: South African Institute for Distance Education. (pp.33-40).
- Ebel, R.L. & Frisbie, D.A. 1991. *Essentials of educational measurement* (5th edition). Engelwood Cliffs, New Jersey: Prentice Hall.
- Elliot, J. 1991. *Action research for educational change*. Buckingham: Open University Press.
- Ellis, S.M. & Steyn, H.S. 2003. Practical significance (effect sizes) versus or in combination with statistical significance (p-values), *Management Dynamics*, 12(4): 51-53.
- Elton, L. & Laurillard, D. 1979. Trends in student learning. *Studies in Higher Education*, 4: 87-102.
- Emerson, L. 1999. A collaborative approach to integrating the teaching of writing into the science in a New Zealand tertiary context. Unpublished PhD-thesis. Palmerston North: Massey University.
- Emerson, R.M, Fretz, R.I & Shaw, L.S. 1995. *Writing ethnographic fieldnotes*. Chicago: The University of Chicago Press.
- Engelbrecht, P., Green, L., Naicker, S. & Engelbrecht, L. (Eds). 1999. *Inclusive education in action in South Africa*. Pretoria: Van Schaik.
- Erasmus, A. 2006. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Ernest, P. 1991. *The philosophy of mathematics education*. Hampshire: The Falmer Press.
- Ernest, P. 1994. Introduction. In Ernest, P. (Ed.). *Mathematics, education and philosophy: An international perspective*. London: The Falmer Press. (pp. 1-8).

- Ernest, P. 1994. Reconceptualising the philosophy of mathematics. In Ernest, P. (Ed.). *Mathematics, education and philosophy: An international perspective*. London: The Falmer Press. (pp. 9-10).
- Ernest, P. 1994. The dialogical nature of mathematics. In Ernest, P. (Ed.). *Mathematics, education and philosophy: An international perspective*. London: The Falmer Press. (pp. 33-48).
- ETDP SETA, 2002. Assessor course: Workbook and Manual. Unpublished study notes, Pretoria: Accreditation and training services.
- Feldman, A. 1994. Erzberger's dilemma: Validity in action research and science teachers' need to know. *Science Education*, 78(1): 83-101.
- Fourie, C. 17.09.2006. Nog minder sal in skaars rigtings kan studeer. *Rapport*: 13.
- Fourie, C. 17.09.2006. Nuwe wiskunde tog nie so maklik. *Rapport*: 13.
- Foxman, D., Ruddock, G. & Thorpe, J. 1989. *Graduated tests in mathematics*. England: NFER Nelson Publishing Company Ltd.
- Fraenkel, J.R. & Wallen, N.E. 2003. *Student workbook to accompany How to design and evaluate research in education*. Boston: McGraw-Hill.
- Fraser, W.J. 2003. Inligting aan C.J. Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Fraser, W.J. 2005. Inligting aan C.J. Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Fraser, W.J. 2006. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Fraser, W.J. & Killen, R. 2003. Factors influencing academic success or failure of first-year and senior university students: Do education students and lecturers perceive things differently? *South African Journal of education*, 23(4): 254-263.
- Freeman, R. & Lewis, R. 1998. *Planning and implementing assessment*. London: Kogan Page.
- Freudenthal, H. 1991. China Lectures: Revisiting mathematics education. Dordrecht, the Netherlands: Kluwer Academic Publishers.
- Freudenthal, H. 1973. *Mathematics as educational task*. Dordrecht: Kluwer Academic Publishers.

- Fritz, E. 2001. 'n Etnografiese studie van 'n skool in verandering. Ongepubliseerde doktorale proefskrif. Johannesburg: Randse Afrikaanse Universiteit.
- Gauteng Department of Education (GDE) 2002. Omsendskrywe 22/2002. Johannesburg: Gauteng Department of Education
- Gerber, A. 2005. Eksperimentering haal die regering nou in. In Rademeyer, A. 28.7.2005. Skole se slaagsyf nie beeld van realiteit. *Beeld*: 14.
- Geyser, H. 1997. Outentieke evalueringsportefeuilles. *Tydskrif vir Taalonderrig*, 31(2): 114-130.
- Glatthorn, A.A. 1993. Outcomes-based education: Reform and the curriculum process. *Journal of Curriculum and Supervision*, 67(4): 354-363.
- Gravemeijer, K. 1994. *Developing realistic mathematics education*. Culemborg: Tecnipress.
- Grundy, S. & Kemmis, S. 1988. Educational action research in Australia: The state of the art (an overview). In Kemmis, S. & McTaggart, R. (Eds). *The action research reader*. Victoria: Deakin University Press. (pp. 83-97).
- Hammersley, M. & Atkinson, P. 1995. *Ethnography: Principles in practice* (2nd edition). London: Routledge.
- Harman, K & Meek, V.L. 2002. Merger revisited: International perspective on mergers in higher education. *Higher Education*, 44: 1-4.
- Hart, D. 1994. *Authentic assessment: A handbook for educators*. California: Addison-Wesley Publishing Company Inc.
- Harman, K. 2002. Merging divergent campus cultures into coherent educational communities: Challenges for higher education leaders. *Higher Education*, 44: 1-4.
- Hatting, A. 2005. Lesing aangebied tydens die PhD-ondersteuningsgroep, Universiteit van Pretoria, 23 Augustus 2005.
- Heap, N.W., Kear, K.L. & Bissell, C.C. 2004. An overview of ICT-based assessment for engineering education. *European Journal of Engineering Education*, 29(2): 241-250.
- Henning, M. 2005. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2005.

- Herington, J. & Herington, A. 1998. Authentic assessment and multimedia: How university students respond to a model of authentic assessment. *Higher Education Research and Development*, 17(3): 305-322.
- Her Majesty's Inspectorate. 1985. *Mathematics from 5-16*. London: Her Majesty's Stationery Office.
- Hersh, R. 1994. Fresh breezes in the philosophy of mathematics. In Ernest, P. (Ed.). *Mathematics, education and philosophy: An international perspective*. London: The Falmer Press. (pp. 11-20).
- Hiebert, J. & Carpenter, T.P. 1992. Learning and teaching with understanding. In Grouws, D.A. (Ed.). *Handbook of research on mathematics teaching and learning*. New York: Macmillan Publishing Company. (pp. 65-97).
- Hodgkinson, C.A. 1998. Assessment of prior learning of pre-service teachers' computer literacy: A model for accreditation and flexible learning. Unpublished PhD thesis. Pretoria: University of Pretoria.
- Hodgkinson, C. A. & Maree, J. G. 1998. Action research: Some guidelines for first-time researchers in education. *Journal of Education and Training*, 19(2): 51-65.
- Howie, S. & Plomp, T. 2005. TIMMS – mathematics findings from national and international perspectives: In search of explanations. *Educational Research and Evaluation*, 11(2): 101-106.
- Huba, M.E. & Freed, J.E. 2000. *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Toronto: Allyn and Bacon.
- Isaacs, S. B. A. 1999. The quest for implementing quality in distance education: How our national qualifications framework will enhance quality in education training and enable the best quality practices possible for all learning. *OiSA Review*, 5: 20-25.
- Jacobs, M., Gawe, N & Vakalisa, N. C. G. (Eds). 2000. *Teaching-learning dynamics: A participative approach for OBE (2nd edition)*. Johannesburg: Heinemann.
- Janesick, V.J. 2004. "Stretching" exercises for qualitative researchers. Thousand Oaks: Sage Publishers.
- Jansen, J.D 1999. Why outcomes-based education will fail: An elaboration. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 145-156).

- Jansen, J.D. 1999. 'A very noisy OBE': The implementation of OBE in Grade 1 classrooms. In Jansen, J. & Christie, P. (Eds). 1999. *Changing curriculum. Studies on Outcomes-based education in South Africa*. Cape Town: Juta & Co. Ltd. (pp. 203-217).
- Jansen, J. 2004. *The conceptual or theoretical framework*. Unpublished study notes for the PhD seminar, Department of Policy Studies University of Pretoria, Pretoria. 7 Junie 2004.
- Janse van Rensburg, J. 1998. Assessment. In Pretorius, F. (Ed.). *Outcomes-Based education in South Africa*. Randburg: Hodder & Stoughton. (pp.88-102).
- Jones, R.W. & Barnard, J.J. 1996. Classroom assessment. *Spectrum*, 34(2): 2-7.
- Johnston, L. & Lynden, M. 2004. Assessing contributions to group assignments. *Assessment and Evaluation in Higher Education*, 29(6): 751-768.
- Joubert, I. (in press). Tracing the impact of self-directed team learning in an air traffic control environment. Unpublished PhD thesis. Pretoria: University of Pretoria.
- Joubert, J. 15.02.2005. Einde van hoër- en standaardgraad. *Beeld*: 2.
- Kamfer, F.H.T. 2006. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Kelsey, K. 2005. Mixed method designs: Based on Tashakkori, A & Teddlie, C (Eds). 2003. *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage Publication. Unpublished study notes. Pretoria: University of Pretoria.
- Kemmis, S. & McTaggart, R (Eds). 1982. *The action research planner*. Victoria: Deakin University Press.
- Kemmis, S. & McTaggart, R (Eds). 1988. *The action research planner* (2nd edition). Geelong: Deakin University Press.
- Kilbane, J. 1998. Outcomes-based education: Friend or foe? *Loni Dishong Bird*, 1-12.
- Killen, R. 1998a. Outcomes-based education: Principles and possibilities. Available url: http://www.ericfacility.net/databases/ERIC_Digests/ed309563.html. Accessed 16 February 2005.

- Killen, R. 1998b. Outcomes-based education: Some issues to consider in the South African context. Paper prepared as an overview of OBE for a series of workshops presented at Vista University during May/June 1998.
- King, J.A. & Evans, K.M. 1991. Can we achieve outcomes-based education? *Educational Leadership*, 49(2): 73-75.
- Kok, J.C. & Grobler, R.C. 2001. Professionele en onprofessionele gedragseienskappe van onderwysers en die implikasie daarvan vir onderwyseropleiding. *South African Journal of Education*, 21(1): 133-137.
- Kok, J.C., Smith, J.A.J. & Swart, G.J.J. 1992. *Uitnodigende skoolbestuur*. Witbank: Dutland.
- Kotze, G. S. 2004. Outcomes-based assessment strategies. In Maree, J.G. & Fraser, W.J. (Eds). *Outcomes-based assessment*. Cape Town: Heineman. (pp. 45-64).
- Kraak, A. 1999. Competing education and training policy discourses: A 'systemic' versus 'unit standards' framework. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 21-58).
- Krefting, L. 1991. Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy*. 45(3):214-221.
- Kriek, C.G. 2003. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Kriel, S. 1993. Advancing emancipatory practices in art education. In Davidoff, S., Julie, C., Meerkotter, D. & Robinson, M. (Eds). 1993. *Emancipatory education and action research*. Pretoria: Human Research Council. (pp. 33-42).
- Krueger, R.A. 1994. *Focus groups*. London: Sage.
- Kruger, P.J. 1974. Aspekte van evaluering in wiskunde in sekondêre skole in Transvaal. Ongepubliseerde M-verhandeling. Pretoria: Universiteit van Suid-Afrika.
- Krüger, R.A. 1980. *Beginsels en kriteria vir kurrikulumontwerp*. Pretoria: HAUM.
- Kübler-Ross, E. 1986. *On death and dying*. New York: Macmillan.

- Lajoie, S.P. 1995. A framework for authentic assessment in mathematics. In Romberg, T.A. (Ed.). *Reform in school mathematics and authentic assessment*. Albany: State University of New York Press. (pp. 19-37).
- Larkins, H. 2005. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Leach, E.L. 1992. An alternative form of evaluation that complies with NCTM's standards. *The Mathematics Teacher*, 85(8): 628-632.
- Lesh, R. & Lamon, S.J. 1993. Trends, goals and priorities in mathematics assessment. In Lesh, R. & Lamon, S.J. (Eds). *Assessment of authentic performance in school mathematics*. Washington DC: American Association for the advancement of Science. (pp. 3-15).
- Lesh, R., Lamon, S.J., Gong, B. & Post, T. 1993. Using learning progress maps to improve educational decision making. In Lesh, R. & Lamon, S.J. (Eds). *Assessment of authentic performance in school mathematics*. Washington DC: American Association for the advancement of Science. (pp. 343-375).
- Lester, F.K. Jr & Kroll, D.L. 1991. Evaluation: A new vision. *The Mathematics Teacher*, 84(4): 276-283.
- Lethoko, M.X., Heystek, J. & Maree, J.G. 2001. The role of principles, teachers and students in restoring the culture of learning, teaching and service (COLT) in black schools in the Pretoria region. *South African Journal of Education*, 21(4): 311-317.
- Lewin, K. 1948. *Resolving social conflicts*. London: Harper and Row, Publishers Inc.
- Lewin, K. 1984. Goal, Educational: Developing Countries. In Husén, T & Postlethwaite, T.N. (Eds). *The International Encyclopedia of Education* (2nd edition). London: Pergamon.
- Lincoln, Y.S. & Guba, E.G. 1985. *Naturalistic inquiry*. Newbury Park: Sage.
- Lomax, P. 1990a. *Managing staff development in schools*. Clevedon: Multi-Lingual Matters.
- Lomax, P. 1990b. An action research approach to developing staff in schools. In Lomax, P. (Ed.). *Managing staff development in schools*. Clevedon: Multi-Lingual Matters. (pp. 2-7).

- Louw, C.J. 2003. Die impak van tutoriale op die wiskundeprestasie van studente in eerstejaarswiskunde. Ongepubliseerde M-verhandeling. Pretoria: Universiteit van Pretoria.
- Louw, I. 2000. Definitions of action research. In Zuber-Skerritt, O. (Collater) 2000. *Australia – South Africa Links program: Phase 1: Introduction to action learning and action research and leadership*. Intensive residential program, Mabalingwe, South Africa. 13-20 April 2000. (p 12).
- Lubisi, C., Wedekind, V. & Parker, B. 1997. Knowledge, curriculum and assessment in South Africa. In Gultig, J. (Ed.). *Understanding outcomes-based education. A learning guide*. Johannesburg: South African Institute for Distance Education. (pp. 32-36)
- Lycke, K.H. 2004. Perspectives on quality assurance in higher education in Norway. *Quality in Higher Education*, 10(3): 219-229.
- Mabry, L. 1999. *Portfolios plus: A critical guide to alternative assessment*. Thousand Oaks: Corwin.
- Maclellan, E. 2004. Authenticity in assessment tasks: A heuristic exploration of academics' perceptions. *Higher Education Research and Development*, 23 (1): 19-33.
- Madaus, G. 1997. The influence of testing on the curriculum. In Lubisi, Wedekind, Parker & Gultig (Eds). *Understanding outcomes-based education. Reader*. Johannesburg: South African Institute for Distance Education. (pp. 29-32).
- Malan, B. 1997. *Excellence through outcomes*. Pretoria: Kagiso.
- Malcolm, C. 1999. Outcomes-based education has different forms. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 77-113).
- Malcolm, C. 2000. Implementation of outcomes-based approaches to education in Australia and South Africa: A comparative study. Johannesburg: Gauteng Institute for Curriculum Development.
- Malone, J.A., Stoker, J. & Southwood, S. 1996. Assessment concerns of South African mathematics teachers. *Pythagoras*, 39: 33-37.
- Marais, P.J.J.M. 2006. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.

- Maree, J.G. 1997. The development and evaluation of a study questionnaire in mathematics. Unpublished PhD thesis. Pretoria: University of Pretoria.
- Maree, K. 2002. Leadership in mathematics. In Calitz, L, Fuglestad, O.L. & Lilleford, S. (Eds). *Leadership in education*. Sandown: Heineman Publishers. (pp196-216).
- Maree, J.G. 2004. Assessment in mathematics. In Maree, J.G. & Fraser, W.J. (Eds). *Outcomes-based assessment*. Cape Town: Heineman. (pp. 242-263)
- Maree, J.G. 2005. Persoonlike inligting aan C J Louw verskaf na aanleiding van 'n slypskool gehou op 21 Augustus 2005.
- Maree, J.G. 2006. Persoonlike inligting aan C J Louw verskaf na aanleiding van 'n gesprek met Dr S Ellis gedurende Augustus 2006.
- Masitsa, M.G. 1995. The establishment of a learning culture as a prerequisite for academic achievement. Unpublished D-thesis. Pretoria: University of Pretoria.
- Masters, G. & Forster, M. 1996. *Developmental Assessment: Assessment resource kit*. Melbourne: The Australian Council for Educational Research Ltd.
- Maykut, P. & Morehouse, R. 1994. *Beginning qualitative research: A philosophical and practical guide*. London: Falmer Press.
- McGhan, B. 1994. The possible outcomes of outcomes-based education. *Educational Leadership*, 51: 70-72.
- McMahon, T. 1999. Is reflective practice synonymous with action research? *Educational Action research*, 7(1): 163-169.
- McKinnon, K.R. 1988. United we stand ... the process of amalgamation at Wollongong University. In *Institutional Amalgamations in Higher Education – Process and outcome in five countries*. Department of Administration and Higher Education Studies, University of New England. (pp. 105-120).
- McMillan, J. H. & Schumacher, S. 2001. *Research in Education: A conceptual introduction* (5th edition). New York: Addison-Wesley Longman Inc.
- McNeir, G. 1993. Outcomes-based education. ERIC digest, No 85. [Online] Available url: <http://ericfacility.net/ericdigests/ed363914.html> Accessed 5 March 2005.
- McNiff, J., Lomax, P. & Whitehead, J. 1996. *You and your action research project*. London: Routledge.

- Merriam, S. 1998. *Qualitative research and case study application in education*. San Francisco: Jossey Bass.
- Merriam, S.B. 1988. *Case study research in education: A qualitative approach*. California: Jossey-Bass.
- Meyer, E. 2002. *Assessment in education*. Study guide: AWO 400. Unpublished study guide, Department of Curriculum Studies. University of Pretoria, Pretoria.
- Millard, S. 2006. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Miller, S.I. & Fredericks, M. 1994. *Qualitative research methods: Social epistemology and practical inquiry*. New York: Peter Lang.
- Mills, G.E. 2003. *Action research: A guide for the teacher researcher*. (2nd edition). New Jersey: Merrill Prentice Hall.
- Morse, J.M. (Ed.). 1994. *Critical issues in qualitative research methods*. California: Sage publication.
- Mothata, M.S. 1998. The National Qualifications Framework. In Pretorius, F (Ed.). *Outcomes-based education in South Africa*. Randburg: Hodder and Stoughton. (pp. 13-26).
- Mouton, J. 1996. Die aard en struktuur van wetenskapbeoefening. In Garbers, J.G. (Red.). *Doeltreffende geesteswetenskaplike navorsing*. Pretoria: JL van Schaik. (pp. 15-35).
- Naidoo, D. 2006. Inligting aan C J Louw verskaf tydens 'n vergadering van die werkgroep vir assessering (HEQC-audit) by TUT op 23 Augustus 2006.
- NDE, 1997. *Curriculum 2005*. Pretoria: National Department of Education.
- Nitko, A.J. 2001. *Educational assessment of students*. (3rd edition) New Jersey: Merrill Prentice Hall.
- Noffke, S.E. 1997. Themes and tensions in US action research: Towards historical analysis. In Hollingsworth, S. (Ed.). *International action research: A casebook for educational reform*. London: Falmer Press. (pp. 2-16).
- Nolan, J. (jr.) & Meister, D.G. 2000. *Teachers and educational change: The lived experience of secondary school restructuring*. Albany: State University of New York Press.
- Norman, D.A. 1982. *Learning and memory*. San Francisco: Freeman.

- Norman, G.R. & Schmidt, H.G. 1992. The psychological basis of problem-based learning: A review of the evidence. *Academic Medicine* 67(9): 557-565.
- Norris, B.D. 1996. Managing diversity within South-African technikons: A strategic management approach. *South African Journal of Higher Education*, 10: 25-27.
- Norris, B.D. 2001. Transformation, diversity and organisational change within institutions of higher education. *South African Journal of Education*, 21(4): 219-222.
- Norwood, K.S. & Carter, G. 1994. Journal writing: An insight into students' understanding. *Teaching Children Mathematics*, 1(3): 146-148.
- Nxumalo, B. 1993. The culture of learning: A survey of Kwa-Mashu schools. *Indicator SA*, 10: 55-60.
- Odendal, F.F., Schoonees, P.C., Swanepoel, C.J., du Toit, S.J. & Booyens, C.M. 1984. *Verklarende handwoordeboek vir die Afrikaanse taal*. Johannesburg: Perskor-Uitgewery.
- Oja, S.N. & Smulyan, L. 1989. *Collaborative action research: A developmental approach*. New York: The Falmer Press.
- Oosthuizen, M. 2003. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Orton, A. 1992. *Learning mathematics: Issues, theory and classroom practice*. (2nd edition). Trowbridge: Dotesios Ltd.
- Otieno, F.A.O. 2006. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Pahad, M. 1999. Outcomes-based assessment: The need for a common vision of what counts and how to count it. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 247-276).
- Pretorius, F. (Ed.) 1998. *Outcomes-based education in South Africa*. Johannesburg: Hodder and Stoughton.
- Price, J.N. 2001. Action research, pedagogy and change: The transformative potential of action research in pre-service teacher education. *Journal of Curriculum studies*, 33(1): 43-74.

- Rademeyer, A. 01.10.2003. Skoolbom: Dit vermink, sê leerkragte; SA kan beste ter wêreld daarmee wees, sê kenner. *Beeld*: 13.
- Rademeyer, A. 15.02.2005. Skole weet gou hoe staan wiskundesake. *Beeld*: 2.
- Rademeyer, A. 15.07.2005. SA hoor A-Z van nuwe kurrikulum: Advertensies vertel van VOO. *Beeld*: 7.
- Rademeyer, A. 19.09.2006. Onderwysers weet nie wat dit behels, wys navorsing: Dié assessering onbetroubaar. *Beeld*: 6.
- Ramsden, P. 1984. The context of learning. In Marton, F. (Ed.). *The experience of learning*. Edinburgh: Scottish Academic Press.
- Rasool, M. 1999. Critical responses to 'Why OBE will fail'. In Jansen, J. & Christie, P. (Eds). *Changing curriculum: Studies on outcomes-based education*. Kenwyn: Juta & Co. Ltd. (pp. 171-180).
- Reddy, C. 2004. Assessment principles and approaches. In Maree, J.G. & Fraser, W.J. (Eds). *Outcomes-based assessment*. Cape Town: Heineman. (pp. 29-44).
- Reynecke, K. 2005. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Ritter, L. 2000. The quest for an effective form of assessment: The evolution and evaluation of a controlled assessment procedure (CAP). *Assessment and Evaluation in Higher Education*, 25(4): 307-320.
- Romberg, T.A. (Ed.). 1995. *Reform in school mathematics and authentic assessment*. New York: State University of New York Press.
- Rooi, J. 07.12.2003. Ongelykheid leef nog ná tien jaar: Gaping bly wyd tussen ryk en arm skole. *Rapport*: 2.
- Rosenthal, R. 1991. *Meta-analytic procedures for social research*. California: Sage Publications.
- Scherman, V. 2004. Recording and reporting assessment. In Maree, J.G. & Fraser, W.J. (Eds). *Outcomes-based assessment*. Cape Town: Heineman. (pp.142-158).
- Schoenfeld, A.H. 1985. *Mathematical problem solving*. London: Academic Press.
- Schwartz, G & Cavener, L.A. 1994. Outcomes-based education and curriculum change: Advocacy, practice and critique. *Journal of Curriculum and Supervision*, 9(4): 326-339.

- Scott, R. 1988. The amalgamation of James Cook University with the Townsville College of Advanced Education: Preliminaries to implementation. In Harman, G. & Meek, V.L. (Eds). *Institutional Amalgamations in Higher Education – Process and outcome in five countries*. Department of Administration and Higher Education Studies, University of New England. (pp. 11-37).
- Sereda, J. 1993. Educational quality indicators in art and mathematics. *The Alberta Journal of Educational Research*, 39(2): 217-233.
- Singh, R.J. 2003. The implementation of Outcomes-based education in Grade 9: A critical analysis. Unpublished doctoral thesis. Johannesburg: Rand Afrikaans University.
- Siebörger, R. & Macintosh,H. 1998. *Transforming assessment: A guide for South African teachers*. Lansdowne: Juta & Kie.
- Slabbert, J.A. 2003. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Smit, B. 2004. Qualitative research designs; qualitative data analysis. In PhD Research support session, 16-19 August 2004. Unpublished study notes. Pretoria: University of Pretoria.
- Socha, S.C. 1989. Math class log. *Mathematics Teacher*, 82(7): 511-513.
- Spady, W. 2004. Using the SAQA critical outcomes to empower learners and transform education. *Perspectives in Education*, 22(2): 165-176.
- Spady, W.G. 1994a. *Outcomes-based education: Critical issues and answers*. Arlington, VA: American Association of School Administrators.
- Stefani, L.A.J. 1998. Assessment in partnership with learners. *Assessment and Evaluation in Higher Education*, 23(4): 339-350.
- Steyn, F. 2006. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Steyn, G.M. 2001. Focusing on guiding principles of quality to redesign educational institutions. *South African Journal of Education*, 21(1): 17-24.
- Steyn, H.S. (jr.) 1999. Praktiese beduidendheid: Die gebruik van effekgroottes. Wetenskaplike bydrae, Reeks B: Natuurwetenskappe nr. 117. Publikasiebeheerkomitee, PU vir CHO, Potchefstroom.

- Steyn, H.S. (jr.) 2000. Practical significance of the difference in means, *Journal of Industrial Psychology*, 26(3): 1-3
- Steyn, P.J.N. 1993. Die werkopdrag in tersi re onderrig: Kan selfevaluering werk? Seminaar gelewer te Universiteit Vista, 19 Augustus 1993.
- Steyn, T.M. 2003. A learning facilitation strategy for mathematics in a support course for first year engineering students at the University of Pretoria. Unpublished doctoral thesis. Pretoria: University of Pretoria.
- Strauss, J. 1990. Vraagstukke in wiskunde-onderrig en die implikasie vir onderwysopleiding. Johannesburg: RAU – Professorale intreerede.
- Strydom, A.H. 1999. *Report on the National Conference on Co-operation in Higher Education*. Pretoria: Department of Education.
- Suleman, G.H. 1986. Resource-based learning: The logical alternative. *Springfield Journal of Education*, 1(3): 4-9.
- Terre Blanche, M. & Durrheim, K. (Eds). 1999. *Research in practice, applied methods for social sciences*. Cape Town: UCT Press.
- Tesch, R. 1990. *Qualitative research: Analysis types and software tools*. New York: Falmer.
- Thom, R. 1973. Modern mathematics: Does it exist? In Howson, A.G. (Ed.). *Development in mathematical education*. Cambridge: Cambridge University Press. (pp. 194-209).
- Thomas, D. A. 1992. Teenagers, teachers and mathematics. United States of America: Allyn and Bacon.
- Thompson, A.G. 1984. The relationship between teachers' conceptions of mathematics and mathematics teaching to instructional practice. *Educational Studies in Mathematics*, 15: 105-127.
- Tobias, B. 2003. Do you speak mathematics? *Pythagoras*, 58: 21-26.
- Tripp, D.H. 1990. Socially critical action research. *Theory into practice*, 19(3): 144-151
- Tsatsaroni, A. & Evans, J. 1994. Mathematics: The problematical notion of closure. In Ernest, P. (Ed.). *Mathematics, education and philosophy: An international perspective*. London: The Falmer Press. (pp. 87-108).

- Tuckman, B. W. 1978. *Conducting educational research* (2nd edition). New York: Harcourt Brace Jovanovich Publishers.
- Tyler, R.W. 1950. *Basic principles of curriculum and instruction*. Chicago: University of Chicago Press.
- Van Antwerpen, S. 2005. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Van den Heuvel-Panhuizen, M. 1996. *Assessment and realistic mathematics education*. Culemborg: Technipress.
- Van der Berg, I., Admiraal, W. & Pilot, A. 2006. Peer assessment in university teaching: Evaluating seven course designs. *Assessment and Evaluation in Higher Education*, 31(1): 19-36.
- Van der Horst, H. & McDonald, R. 1997. *Outcomes-based education: Teacher's manual*. Pretoria: Kagiso Publishers.
- Van der Horst, H. & McDonald, R. 2001. *Outcomes-based education: Theory and practice*. Pretoria: Van der Horst & McDonald.
- Van der Linde, M. 2005. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2006.
- Van der Vyver, J. 1999. Outcomes-based education in higher and further education. *South African Journal for Higher Education*, 13(2): 5-6.
- Van der Watt, R. 1999. Evaluering en assessering in wiskunde-onderrig. Ongepubliseerde D.Ed-proefskrif. Johannesburg: Randse Afrikaanse Universiteit.
- Van der Westhuizen, C.N. 2004. The games institutions play – or the impact of university incorporation on the attitudes, beliefs and perceptions of college lecturers. *South African Journal of Higher Education*, 18(1): 153-164.
- Van Staden, E. 2006a. Inligting verskaf tydens 'n fakultêre byeenkoms op 17 Augustus 2006.
- Van Staden, L. 2006b. Inligting verskaf tydens 'n Fakultetsraadsvergadering van TUT op 4 Augustus 2006.
- Van Staden, Y. 2003. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2003.

- Van Staden, Y. 2005. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Van Vuuren, D. 2005. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 2005.
- Venter, A. 2003. Inligting aan C J Louw verskaf tydens persoonlike kommunikasie gedurende 2003.
- Venter, J.H. 1999. Inligting aan CJ Louw verskaf tydens persoonlike kommunikasie gedurende 1999.
- Verhage, H. & De Lange, J. 1997. Mathematics education and assessment. *Pythagoras*, 24: 14-20.
- Viljoen, J. 2005. Onderwysparadigmas. Ongepubliseerde studienotas vir die PhD-seminaar, Departement Beleidstudies Universiteit van Pretoria, Pretoria. 25 Mei 2005.
- Voges, E. 2005. Persoonlike opmerkings gemaak tydens 'n assesseringslyskool vir die Fakulteit van Natuurwetenskappe. Arcadia: Tshwane Universiteit van Tegnologie. 27 Oktober 2005.
- Walker, J.C. & Evers, C.W. 1996. Epistemology in educational research. In Tuijnman, A.C. (Ed.). *International encyclopedia of adult education and training*. (2nd edition). New York: Elsevier Science Ltd. (pp. 173-182).
- Wallen, N.E. & Fraenkel, J.R. 1991. *Educational Research: A guide to the process*. San Francisco: McGraw-Hill.
- Webb, N.L. 1993. Assessment for the mathematics classroom. In Webb, N.L. (Ed.). *Assessment in the mathematics classroom*. Virginia: The National Council of Teachers of Mathematics. (pp. 1-6).
- Webbstock, D. 1999. An evaluative look at the model used in the assessment of teaching quality at the University of Natal, South Africa: Reflections, rewards and reconsideration. *Assessment and Evaluation in Higher Education*, 24(2): 157-180.
- Wheeler, D.K. 1983. *Curriculum process*. Great Britain, Guildford: Biddles Ltd.
- Wiggins, G. 1989. Teaching to the (authentic) test. *Educational Leadership*, 46: 41-47.
- Wiggins, G. 1993. Assessment: authenticity, context and validity. *Phi Delta Kappan*, 75: 200-214.

- Willcoxon, L. 1994. Action research: Theory and practice for higher education. *Higher Education Research and development*, 13(1): 93-98.
- Willis, D. 1993. Learning and assessment: Exposing the inconsistencies of theory and practice. *Oxford Review of Education*, 19(3): 5-16.
- Winter, R. 1989. *Learning from experience: Principles and practice in action research*. Lewes: Falmer Press.
- Wolcott, H.F. 1995. *The art of fieldwork*. California: AltaMira Press.
- Wolcott, H.F. 1999. *Ethnography: A way of seeing*. California: AltaMira Press.
- Yorke, M. 2004. Institutional research and its relevance to the performance of higher education institutions. *Journal of Higher Education Policy and Management*, 26(2): 141-152.
- Zaaiman, H., Van der Flier, H. & Thijs, G.D. 2000. Selection as contract to teach at the student's level. Experiences from a South African mathematics and science foundation year. *Higher Education*, 40: 1-21.
- Zuber-Skerrit, O. 1992a. *Professional development in higher education. A theoretical framework for action research*. London: Kogan Page.
- Zuber-Skerrit, O. 1992b. *Action research in higher education - Examples and reflections*. London: Kogan Page.
- Zuber-Skerrit, O. 1995. Models for action research. In S. Pinchen en R. Passfield (Eds). *Moving on - Creative applications of Action Learning and Action research*: 3-29. Brisbane: ALARPM.
- Zuber-Skerritt, O. 1997. *Action learning and action research*. Workshop presented at Stellenbosch, South Africa, January 1997.
- Zuber-Skerritt, O. 1998. Focus group technique. In Zuber-Skerritt, O (Ed.). *Starting qualitative research in the social sciences: Book of resources*. (2nd edition). Lismore: Southern Cross University Press. (pp. 181-182).
- Zuber-Skerritt, O. (Collater) 2000a. *Australia – South Africa Links program: Phase 1: Introduction to action learning and action research and leadership*. Intensive residential program, Mabalingwe, South Africa. 13-20 April 2000.

INSTEMMING
TOT DEELNAME AAN 'N FOKUSGROEPONDERHOUD
DEUR C J LOUW GEFASILITEER

Ek, die ondergetekende, verklaar hiermee dat ek oor die inhoud van die onderhawige studie ingelig is. Ek het reeds voorheen 'n slypskool bygewoon.

Me Louw onderneem om die verkreeë inligting vertroulik te hanteer en anoniem te rapporteer.

Die fokusgroeponderhoud handel oor assessering in ons bepaalde opset, naamlik TUT.

Hiermee verleen ek goedkeuring dat die verkreeë data vir haar PhD-studie gebruik mag word.

.....
Respondent

.....
Datum



Directorate: Research and Development

Focus Area Support
Research and Development Administration
Statistical Support

21 June 2004

Ms I Louw
Soshanguve Campus

Dear Ms Louw,

REQUEST TO DISTRIBUTE A MATHEMATICS FACILITATORS QUESTIONNAIRE AND STUDENT QUESTIONNAIRE IN MATHEMATICS

We are pleased to inform you that the Tshwane University of Technology approved your request to distribute questionnaires pertaining to the above-mentioned. We enclose the comments from the reviewers.

Reviewer 1:

- ◆ I am in principle in support of the distribution of these questionnaires, if this is part of a staff development initiative.

Reviewer 2:

- ◆ Approved for distribution.

Wish you all the best with this project.

Kind regards,

A handwritten signature in blue ink that appears to read "Lourens".

Prof Amanda Lourens
Director: Research & Development

I Louw questionnaire outcome June 2004

•
• •
We empower people

Onderhoud met sekondêre wiskundefasilitateerder
Respondent 3

'n Wiskundefasilitateerder se beskouing oor assessering aan die hand van verskillende vrae

Vraag 1: Vir watter grade onderrig u tans wiskunde?	
Respondent	Beskouing
Graad 11, maar ek het al al die grade gehad vandat die portefeuilles gemaak word.	
Vraag 2: Hoe het u die infasering van uitkomsgeregte assessorering (UGA) beleef?	
Respondent	Beskouing
Die assessorering was beter as die uitwerk van die temas, want by assessorering het ons behoorlike instruksies en voorbeeld gekry. Toe ons uiteindelik die assessoringsvoorskrifte swart op wit kry, toe gaan dit beter, want toe weet ons wat om te doen.	
Vraag 3: Moes u 'n denksprong/paradigmaskuif maak om die assessoringsbenaderings te kon uitvoer?	
Respondent	Beskouing
Ja, ek moes leer om meetkundeprobleme met 'n rubriek na te sien. Dis maar snaaks vir 'n wiskundeonderwyser wat gewoond was om punte vir stappe te gee. Ons moes ook leer om ons eie rubrieks te maak. In ons <i>cluster</i> modereer ons mekaar se nasienwerk en leer ook bymekaar.	
Vraag 4: Hoe het u hierdie denksprong beleef?	
Respondent	Beskouing
Dit was vir my goed om 'n slag nuwe goed te doen, veral omdat ons geweet het waarheen ons op pad is.	
Vraag 5: Hoe voel u oor die nuwe assessoringsstrategieë?	
Respondent	Beskouing
Breinkaarte is baie bruikbaar, want dis kernopsommings. Werkkaarte is eintlik maar bloot meetkundeprobleme, maar dit werk ook goed. Translasies toets hulle verbale vermoëns, byvoorbeeld ek vra: "Wat beteken $f(3) = y$? Leerders sukkel om dit in woorde te sê. Al wat sleg is, is dat die gewig baie klein is. Hulle jaarpunt tel nou 25% en die eksamen 75%. 'n Ondersoek neem hulle 3 weke en dit het altyd 15 getel, dit tel nou net 5.	
Vraag 6: Watter assessoringsstrategie beskou u as die bruikbaarste? Hoekom sê u so?	
Respondent	Beskouing
Werkkaarte, mits dit in die klas voltooi word. Ek kan dan dadelik sien of die leerder gesnap het of nie. Ek kan dan dadelik regstellings begin maak.	

Vraag 7: Verskaf aan my voorbeeld van waar en hoe u die volgende assessoringsstrategieë in u wiskundeklas gebruik. Indien u dit nie gebruik nie, dui dit bloot so aan.		
Respondent	Assesseringstrategie	Voorbeeld
	Joernaalinskrywings	Skryf 'n brief aan jou maat om te verduidelik hoe maal en deel mens algebraïese breuke.
	Rubriek	Meetkunde werkkaarte word deurgaans met rubriek nagesien. (Voorbeeld verskaf).
	Logboeke	Ek ken dit nie. ¹
	Groepbespreking ²	Leerders doen net gewone groepwerk.
	Mondelinge assessorings	Ons gebruik dit nie.
	Selfassesserings	By groepwerk moet leerders die 28 punte in vier verdeel en moet hulle onderhandel om te besluit hoeveel elkeen werd is.
	Eweknie-assesserings	Ja, ek sal soms dat hulle mekaar se stellingtoetsies merk. Ek kontroleer dan net.
	Foutanalises	Ek laat dikwels die leerders vir my sê wat hulle gehoor het en verstaan van 'n nuwe konsep. Hulle mag mekaar dan ook reghelp, maar dit tel nie punte nie.
	GTA's	In die verlede is die promosiepunt van graad 9 leerders deur middel van 'n Afdeling A (klaswerk) en 'n Afdeling B (eksamen) bereken. Vanjaar sal daar egter net 'n Afdeling A wees. GTA's is 'n gemors, want die inhoud pas glad nie by die inhoud van die kurrikulum nie. Nou moet leerders kies tussen wiskunde en wiskundegeletterdheid, maar die eksamen gaan nie 'n realistiese beeld van leerders se vermoëns wees nie.
	Ander	In die begin van die jaar kry elke leerder 'n bonuspunt van 100. Elke keer wat huiswerk of opdragte nie gedoen is nie, verloor die leerder 20. Hierdie punt tel 10% van die semesterpunt en is daar om gereelde werkers te beloon.
Vraag 8: Is daar enigiets anders met betrekking tot assessoring wat jy met my wil deel?		
Respondent	Beskouing	
	Leerders hou niks van groepwerk nie. Die sterk leerders voel die ander trek hulle punte af. Daar moet ook gesorg word dat onderwysers nie gelyktydig graad 9 en graad 12 leerders het nie, want die modereerwerk van die portefeuiljes word te veel vir een persoon om te hanteer.	

¹ Die metode is aan die respondent verduidelik, maar sy het dit nog nooit gebruik nie.

² Groepbespreking as strategie word verduidelik, alvorens ek die respondent die geleentheid gee om te antwoord.

Gedeelte uit 'n transkripsie van 'n persoonlike onderhou.

Gehou in sy kantoor. My voorletter is I en ek gebruik X vir die respondent.

- I: X, wat is jou doelstellings met assessoring? Wanneer jy nou jou studente assesseer, wat is jou doel eintlik?
- X: Wel ek probeer, soort van bepaal of daar enige mate van insig is. In wiskunde werk jy nie net met reproduksie van noodwendig dit wat in die klas gedoen is nie.
- I: Benewens insig, wat wil jy nog daarmee bereik?
- X: Ek wil toets of daar vaardigheid in die wiskunde ontwikkel het, ja, en of die skryfwyses korrek is. En ek wil hê dat die studente moet uit hulle foute kan leer. Daarom is eksamens en toetse vir my 'n groot leerhulpmiddel. Dat hulle daar kan agterkom wat hulle verkeerd doen. Ek doen ook dan nou baie moeite as ek self nasien om nie net te sê dis verkeerd nie, maar as daar is gelyk aans weggelaat is of die dx'e of integrale dan sit ek dit vir hulle in en wanneer mens dan nou die toetse uitdeel dan sê ek let nou op na al die nalatighede wat gemaak is, al het jy volpunte gekry vir 'n vraag.
- I: Wie dink jy behoort almal betrokke te wees by die assessoringsproses?
- X: Wel ek dink dis eintlik maar net twee mense, die assessor wat nou die dosent is, en die student.
- I: Wat is elkeen se rol?
- X: Ongelukkig is ons klasse bietjie groot en die studente kan nie self veel van 'n rol speel nie, so die ideaal sou gewees het dat mens per individuele student sou kon sê ... Dis hoekom ek dink ekstraklasse kan vir mense werk, want dis die ideaal , maar dis nie realisties nie. So al wat jy maar kan doen, is jy kan maar net in die klas sê let hier op en so-aan of daar en of die student dan deelneem aan hierdie assessoringsproses, dit weet ek nou nie. Ek kan dit nie kontroleer nie
- (Klasgroottes is 155 en 80 onderskeidelik)
- I: Het jy nog nooit selfassessering probeer of dat hulle mekaar se werk merk nie?
- X: Ek het nie vertroue in die studente nie, ek dink dit gaan 'n gemors afgee. Ek dink nie dit ... Persoonlik glo ek nie dit kan werk nie. Miskien by 'n regte universiteit, maar ek het daar ook al klas gegee en ek sal dit nie eers daar vertrou nie. Nie in 'n vak soos wiskunde nie.
- I: Hulle is nie realisties in hulle puntetoekennings nie?
- X: Nee, nee nee daar is kere wat mens klastoetsies sou kon uitruil en sê merk jy nou jou maats'n, maar selfs dit doen ek nie.
- I: Watter tipes leer wil jy hoofsaaklik assesseer as jy nou 'n toets gee?
- X: Wat ek wil leer en wat ek ...(stilte) Die tipe asse ass assessment wat ek doen en wat ek wil doen is twee verskillende dinge.
- I: Ja okay, gee vir my altwee dan? Wat wil jy doen?

X: Ag ek sou graag 'n bietjie meer insig wou toets, maar dit werk nie so nie. as ek dit doen dan gaan almal druiп. So ...basies is dit maar net gewone skills wat geleer word aan die studente, jy kan nie jy kan baie min toepaslike werk dek ... ja ugh ...Dit die studente is net nie daar nie, hulle kan dit nie doen nie.

I: Is dit maar kennis hoofsaaklik?

X: Jy vra kennis en selfs wanneer mens toepassings vra, mens leer vir hulle toepassings, dan weet jy alreeds dat dit eintlik 'n mors van tyd is. En en $\frac{3}{4}$ van die studente, as hulle 'n woordsom sien, dan los hulle sommer oop, dan begin hulle nie eers om te antwoord nie. Nou train mens hulle maar wat om te maak as hulle 'n woordsom kry, maar dan is dit nou weer training, dan's die insig nou .. Ek sê as jy nou 'n woordsom kry dan soek jy nou vir hierdie of daai soort woorde. As jy daai soort woorde sien, dan weet jy dis 'n rate of change problem, want daar staan nou cm/sek. So dit is training, dit is nie insig nie. En dit is jammer dat 'n ou dit so moet doen, maar dis die enigste manier hoe jy wel soms resultate kan kry. In die klasgee self probeer ek altyd om nie die insigleerdery heellemal af te skeep nie, ek doen dit wel vir die een of twee wat miskien ... Hier was nou die dag 'n outjie van Rwanda gewees, wat wisk 1 en 2 in my klas was. Die outjie kom toe by my, hy's besig met ervaringsonderrig. Ons doen nie dubbel of trippelintegrale in die wiskunde nie, en iemand het vir hom 'n probleem gegee en hy't nou hierdie ding probeer uitfigure, dit was 'n praktiese probleem, en toe het hy nou volgens myns insiens verkeerdelik probeer om dubbel en trippel integrale te gebruik om die probleem op te los. Die ou het nou teruggekom met sulke goed wat hy self uitgefigure het uit handboeke uit. So hierdie ou kan waarskynlik beter toepas as die res.

I: Wanneer jy nou leeruitkomste assesseer, watter watter assesseringsstrategieë gebruik jy hoofsaaklik? Jy het nou genoem toetse en eksamens, is dit al?

X: Ja.

I: Rede.

X: Prakties. Ons het nie tyd nie. Ons doen toetse, semestertoetse, gewoonlik twee per semester of drie. Ons doen klastoetse, so elke tweedeweek een, dit bring ons gewoonlik by so 5 uit. Deesdae realisties gesproke nou met die toetsweke, want die ingenieurs het nou toetsweke, dan vat hulle meer as twee weke uit 'n semester weg, dan kry ek net 4 klastoetse reg. So dis klastoetse, semestertoetse en die eksamen, dis al. Assignments, eintlik met die groot klasse wat 'n ou mee moet werk en ugh ...

I: Het jy enige hulp met die nasienwerk?

X: Gewoonlik nie, daar is soms assistente wat werk. Ek is 'n ou wat nie navorsing doen nie en nie verder studeer nie en om daai rede voel ek, ek kan maar my merkwerk self doen. En ek doen dit beter as wat die assistente dit doen, ek kry nooit comebacks van my eie merkwerk af nie en as 'n assistent dit merk kry ek comebacks en dan moet ek nou eers ... en dan's ek nie seker het die student dit nou later bygeskryf. Ek weet hoe ek merk, ek weet as 'n ou iets

bygeskryf het, ek sou nie dit misgekyk het nie. Ek verkies om dit self te merk. En dan weet ek ook wat die studente weet en nie weet nie. So ek verkies om dit self te merk. Met die groot klasse is dit nogal 'n "drag", want ons skryf twee verskillende toetse, kyk die kleure verskil ook, want hulle sit skouer teen skouer. So ek stel twee toetse vir elke toets op Ons maak die vrae verskillend en soms nommer ons net party verskillend en as hulle by mekaar kyk, kan hulle nie uitfigure wat aangaan nie.

- I: Dink jy dit gebeur dat mense verskillend assesseer?
- X: Jaaaaa. Ek dink 'n mens poog, wel ek en Ansie wat gereeld saamwerk sal nie identities assesseer nie. Ek dink op die ou einde is ... balanseer dit wel tot 'n groot mate uit, ek dink met mense wat eerlik assesseer. So, ek sal nie bekommert wees as ek en jy byvoorbeeld .. ons weet nie ... ek weet nie hoe jy merk nie en jy weet nie hoe ek merk nie, maar ek sal nie bekommert wees as ek glo jy's 'n eerlike mens en jy assesseer en ek stuur vir jou 'n memorandum ... en jy voel hier het die ou 'n crucial fout gemaak en ek dink nie dis so crucial fout nie, so jy gaan dalk 1/3 gee vir dae vraag en ek 2/3, maar op die einde .. later gaan daar weer andersom verskille wees. So daar gaan verskille wees, ons is mense. Dis onmoontlik dat dit dieselfde is. Ek dink tussen mense wat ondervinding het, gaan 'n ou se punte op die ou einde dieselfde wees. Ja, dit gaan ... op die ou einde as 'n ou 48 het, gaan ons in elk geval weer na sy vraestel kyk. Ek is nie bekommert nie.
- I: Het jy al voorheen, of sal jy dit oorweeg om assessoringskriteria te gebruik?
- X: Soos inne ...
- I: Moet ek vir jou verduidelik wat dit is?
- X: Ja.
- I: By watter geleenthede doen jy orals terugvoer?
- X: Wel ek doen terugvoer obviously in die klas vir die ouens, Ek gee hulle soms sommetjies om te doen, die probleem is natuurlik met 'n klas weereens van 150, en lokale waar daar nie gange is nie, jy kan nie tussenin kom nie. So dan stap ek maar by die langs op die ente van die banke. Siestog. En dan probeer ek vir die ouens sê sommer terwyl hy daar sit en werk: Nee dis nou verkeerd, ek het dan nou mos gesê jy moenie so en so maak nie. Probeer nou om dit nou ... nota daarvan te maak... So op daai manier gee ek terugvoering, soms. Maar dit is baie oneffektief omdat die klas te groot is en ek nie by almal kan uitkom nie. Ons het ook nie tyd om behoorlike oefenklasse te doen nie, want eintlik behoort dieselfde persoon al die kleiner groepe ook te neem, en daar's nie tyd nie. So die ander terugvoer, soos ek sê, ek probeer moeite doen met die toetse.
- I: Skryf jy die memo op die bord?
- X: Ek skryf die ..., ek doen die volledige memo op die bord. behalwe as dit teorie is, dan sê ek bl in die handboek, want ek het dit dan in die klas gedoen in elk geval aanvanklik tydens die lesing. Maar somme doen ek op die bord. Ek sê nie vir hulle presies waar ek punte gegee het nie, dit doen ek nie.

INSTEMMING

TOT ONDERHOUD

MET C J LOUW

Ek, die ondergetekende, verklaar hiermee dat ek ten volle oor die inhoud van die onderhawige studie ingelig is.

Me Louw onderneem om die verkreë inligting vertroulik te hanteer en anoniem te rapporteer.

Die onderhoud handel oor assessering in wiskunde.

Hiermee verleen ek goedkeuring dat die verkreë data vir die PhD-studie gebruik mag word.

.....
Respondent

.....
Datum



Tshwane University of Technology

We empower people



STUDENT QUESTIONNAIRE IN MATHEMATICS

THANK YOU FOR BEING WILLING TO COMPLETE THIS QUESTIONNAIRE.

The purpose of this questionnaire is to trace and evaluate assessment strategies used in mathematics at Tshwane University of Technology in the Faculties of Engineering and Natural Sciences.

It is important that you answer all the questions as honestly as possible.

Your answers to this questionnaire will be treated as confidential.

STUDENT QUESTIONNAIRE IN MATHEMATICS

This questionnaire is aimed at tracing and evaluating the assessment strategies used in the facilitation of mathematics at Tshwane University of Technology. Please answer all questions accurately and honestly. The information will be treated confidentially.

Respondent
Group
Repeat
Type

V1			1
V2			4
V3		6	
V4	4	7	

ANSWER EACH QUESTION BY CIRCLING THE APPROPRIATE NUMBER IN THE SHADED BOX OR BY WRITING YOUR ANSWER IN THE SHADED AREA PROVIDED.

SECTION A: PERSONAL DETAIL

Question 1

What is your gender?

male	1
female	2

v5		8
----	--	---

Question 2

What is your age in years and months?

Years	Months

v6		9
v7		11

Question 3

Is this the first time you registered for Mathematics I?	Yes	No
	1	2

v8		13
----	--	----

Question 4

If your answer to **Question 3** was "No", have you been registered at TUT the previous time you were enrolled for Mathematics I?

Yes	1
No	2

v9 14**Question 5**

If your answer to **Question 4** was "No", where were you registered?

v10 15
SECTION B: OUTCOMES-BASED EDUCATION AND ASSESSMENT
Question 6

Do you know what Outcomes-based Education (OBE) is?

Yes	1
No	2

v11 17

If your answer to **Question 6** is "Yes",
answer **Questions 7 to 11** and then **Question 12**

If your answer to **Question 6** is "No",
skip Questions 7 to 11 and answer **Question 12**.

Question 7

If your answer to **Question 6** was "Yes", have you been taught mathematics at school according to OBE principles?

Yes	1
No	2

v12 18

Question 8

How do you feel about Outcomes-based Education?

Extremely positive	1
Moderately positive	2
Neutral	3
Dislike some features	4
Dislike the whole idea of OBE	5
I have mixed feelings	6

V13 19**Question 9**

Why do you feel this way about OBE?

V14 20V15 22**Question 10**

Does your lecturer implement principles of OBE in his/her **assessment** of your knowledge of mathematics at TUT?

V16 24

Yes	1
No	2
Not sure	3

Question 11

If your answer to **Question 10** was "Yes", to what extent (would you say) has he/she successfully implemented OBE principles in his/her **teaching** of mathematics?

V17 25

More than 75% implemented	1
65%-74% implemented	2
50%-64% implemented	3
25%-49% implemented	4
Less than 25% implemented	5

Question 12

The assessment of mathematics in your class consists of

a number of tests / assignments / worksheets and an examination	1
continuous assessment without a formal examination	2
a combination of the two types mentioned above	3

V18 26**Question 13**

How many of each of the following assessment opportunity types do you have in a semester? **Indicate a zero if you do not have a specific type.**

Tests	
Assignments	
Examinations	
Portfolios	
Worksheets	
Projects	
Oral presentations	
Research papers	
Tutorial tests	

V19	<input type="text"/>	27
V20	<input type="text"/>	29
V21	<input type="text"/>	31
V22	<input type="text"/>	33
V23	<input type="text"/>	35
V24	<input type="text"/>	37
V25	<input type="text"/>	39
V26	<input type="text"/>	41
V27	<input type="text"/>	43

Question 14

Do you write fill-in question papers in mathematics?
(An example is provided below)

Yes	1
No	2

V28 45

Question example:

Differentiate $2xy = 3\sinhx + 2\cos4x$

You would then enter your answer in this box and obtain a mark out of 5

(5)

Question 15

If your answer to **Question 14** was "No", what kind of format do you have? E.g. Computer answer sheets, test books or other.

V29			46
V30			48

Question 16

Please use the following code to answer the next question.

- 1 = A = Always**
- 2 = O = Often**
- 3 = S = Seldom**
- 4 = N = Never**

Which types of questions are included in your mathematics **Examination paper**?

	A	O	S	N
Short questions with simple answers	1	2	3	4
Questions involving subsections	1	2	3	4
Problem-solving questions similar to those done in class	1	2	3	4
Problem-solving of "new" problems	1	2	3	4
Multiple choice questions	1	2	3	4
Open-ended questions	1	2	3	4
Essay type question	1	2	3	4
Other:	1	2	3	4
If "other", please provide an example and mark 1, 2, 3 or 4				

V31		50
V32		51
V33		52
V34		53
V35		54
V36		55
V37		56
V38		57
V39		58

Please explain certain aspects of assessment in mathematics in Questions 17 to Question 25 according to the following scale.

1 = SD = Strongly disagree

2 = D = Disagree

3 = U = Unsure

4 = A = Agree

5 = SA = Strongly agree

Question 17

The time limit is indicated on the mathematics test papers

SD	D	U	A	SA
1	2	3	4	5

V40 60

Question 18

The mathematics test paper has a cover page.

SD	D	U	A	SA
1	2	3	4	5

V41 61

Question 19

Instructions/examination rules appear on the cover page.

SD	D	U	A	SA
1	2	3	4	5

V42 62

Question 20

Adequate space (fill-in papers) is provided to complete the answer.

SD	D	U	A	SA
1	2	3	4	5

V43 63

Question 21

The lecturer discusses the memorandum of the test with us when we receive our scripts.

SD	D	U	A	SA
1	2	3	4	5

V44 64

Question 22

We get the opportunity to query our marks and marking in general.

SD	D	U	A	SA
1	2	3	4	5

V45 65**Question 23**

We get to keep our test scripts.

SD	D	U	A	SA
1	2	3	4	5

V46 66**Question 24**

The total mark for the test is indicated on the test.

SD	D	U	A	SA
1	2	3	4	5

V47 67**Question 25**

The assessment policy for mathematics is known to students.

SD	D	U	A	SA
1	2	3	4	5

V48 68**Question 26**

How does the lecturer communicate **assessment criteria** to the students? **You may mark more than one option.**

verbally in class, during the week before the test	1
by means of the study manual	2
by means of a separate leaflet	3
not at all	4
it is published on a notice board	5
it is published on my office door	6

V49 69V50 70V51 71V52 72V53 73V54 74

Question 27

How does the lecturer communicate the **scope** of the test/assignment to the students?

You may mark more than one option

verbally in class, during the week before the test	1
by means of the study manual	2
by means of a separate leaflet	3
not at all	4
it is published on a notice board	5
it is published on my office door	6

V55	75
V56	76
V57	77
V58	78
V59	79
V60	80

Question 28

Do you know the formula used to calculate your final mark?

Yes	1
No	2

V61	81
-----	----

Question 29

How does your lecturer determine the **failing or passing** of students in mathematics? (**NOT** your admission mark/predicate)

A student needs to obtain at least 50% on average for the semester mark and 50% in the examination to pass	1
A student needs to obtain 50% for each of the assessment opportunities in order to pass	2
A student needs to obtain an average of 50% for all the assessment opportunities	3
Other (Explain in detail):	

V62	82
-----	----

Question 30

Do you get an opportunity to rewrite a test if you have performed unsatisfactorily in it?

Yes	1
No	2

V63	84
-----	----

Question 31

Does the lecturer make a selection from all the assessments done to compile the final mark? Example: He/she uses the best three of the possible four tests that were written.

Yes	1
No	2

V64 85**Question 32**

Do you do group work in mathematics this semester?

Yes	1
No	2

V65 86**Question 33**

What aspect of group work do you like most?

 87
 V66

 89
 V67
Question 34

If you do not like group work, what aspect of it do you dislike the most?

 91
 V68

 93
 V69
Question 35

	Yes	No
Have you completed a mathematics portfolio at school?	1	2

V70 95

Question 36

If your answer to **Question 35** was "Yes", what did you like about the mathematics portfolio?

V71	<input type="text"/>	96
V72	<input type="text"/>	98

Question 37

What was your Grade 12 mark for mathematics?

0-40%	1
41-59%	2
60-79%	3
80-100%	4

V73	<input type="text"/>	100
-----	----------------------	-----

Question 38

In which grade did you complete maths in?

Higher Grade	1
Standard Grade	2
Lower Grade	3

V74	<input type="text"/>	101
-----	----------------------	-----

THANK YOU FOR YOUR TIME



Tshwane University of Technology

We empower people



MATHEMATICS FACILITATORS' QUESTIONNAIRE

*THANK YOU FOR BEING WILLING TO COMPLETE THIS
QUESTIONNAIRE.*

The purpose of this questionnaire is to trace and evaluate assessment strategies used in mathematics and engineering subjects at Tshwane University of Technology in the Faculties of Engineering and Natural Sciences.

It is important that you answer all the questions as honestly as possible.

Your answers to this questionnaire will be treated as confidential.

MATHEMATICS FACILITATORS' QUESTIONNAIRE

This questionnaire is aimed at *inter alia* tracing and evaluating the assessment strategies that you apply in your facilitation of mathematics at Tshwane University of Technology. Please answer all questions accurately and honestly. The information will be treated confidentially.

Respondent

V1			1
V2			4
V3		6	
V4	1	7	

Group

Repeat

Type

ANSWER EACH QUESTION BY CIRCLING THE APPROPRIATE NUMBER IN A SHADED BOX OR BY WRITING YOUR ANSWER IN THE SHADED AREA PROVIDED.

SECTION A: PERSONAL DETAILS

Question 1 What is your gender?

Male	1
Female	2

V5		8
----	--	---

Question 2 What is your age in years and months?

years	months

V6		9
V7		11

Question 3 How many years of experience have you had in teaching **tertiary** mathematics?

		13
--	--	----

Question 4 How many years have you been employed in your **current** position?

V9 15

Question 5 What is your **current** position? (It is possible to mark HOD and another answer)

V10 17

Junior Lecturer	Lecturer	Senior lecturer	Principal lecturer	Assoc Professor	Professor	HOD
1	2	3	4	5	6	7

Question 6 What is your **highest** qualification? (**Mark one answer only**)

V11 19

National Diploma	Higher Diploma	First Degree	Honours Degree	Masters Degree	Doctorate
1	2	3	4	5	6

Question 7 Indicate your **highest** level of experience in tertiary teaching

V12 20

Foundation	1
Semester 1	2
Semester 2	3
Semester 3	4
Semester 4	5
Postgraduate	6

Question 8 How many **national seminars or conferences** have you attended in the last **two years**?

V13 21

Question 9 How many **scientific publications** did you **read** in the **past year**?

V14 23

Question 10

If your answer to **Question 9** was one or more, write down the **names** of the journals/publications that you have **read** in the **past year**.

V15

--	--

 25V16

--	--

 27V17

--	--

 29V18

--	--

 31V19

--	--

 33V20

--	--

 35
**SECTION B: OUTCOMES-BASED EDUCATION (OBE)
AND ASSESSMENT**
Question 11 Have you received training in OBE?

Yes	1
No	2

V21

--

 37

If your answer to **Question 11** is “**Yes**”,

answer **Questions 12 to 15 and then Question 18**

If your answer to **Question 11** is “**No**”,

answer **Questions 16 and 17 and then Question 18**

Question 12

Has your OBE training been **sufficient**?
(Has it **enabled** you to use OBE?)

Yes	1
No	2

V22 38

Please explain your answer to **Question 12**

V23 39V24 41V25 43**Question 13**

Has your OBE training been **relevant**?
(Was it **correct** for your environment?)

Yes	1
No	2

V26 45

Please explain your answer to **Question 13**

V27 46V28 48V29 50**Question 14**

Do you feel that you need further training in OBE?

Yes	1
No	2

V30 52

Question 15 Which aspects of OBE do you need further training in?

Please use the following code to answer the next question.

0 = U = Unsure

1 = Y = Yes

2 = N = No

Aspect	U	Y	N
the principles of OBE	0	1	2
assessment strategies of OBE	0	1	2
implementation of OBE	0	1	2

V31 53
 V32 54
 V33 55

Please go to Question 18 below

Only answer Question 16 and Question 17 if your answer to Question 11 is “No”

Question 16 Would you like to receive training in OBE?

Yes	1
No	2

V34 56

Question 17 What aspect do you need training in?

Please use the following code to answer the next question.

0 = U = Unsure

1 = Y = Yes

2 = N = No

Aspect	U	Y	N
the principles of OBE	0	1	2
assessment strategies of OBE	0	1	2
implementation of OBE	0	1	2

V35 57
 V36 58
 V37 59

Please go to Question 18 below

Question 18 How do you feel about implementing outcomes-based strategies in assessing tertiary mathematics? (**Mark one answer only**)

Extremely positive	1
Moderately positive	2
Neutral	3
Dislike some features	4
Dislike the whole concept and idea of OBE	5
I have mixed feelings	6

V38 60

Question 19 Explain your answer choice as indicated in **Question 18**

V39 61V40 63V41 65

Question 20 How many workshops on **assessment in OBE** have you attended in the **last two years?**

V42 67

Question 21 If your answer to **Question 20** was one or more, what did you learn about assessment in OBE that you could implement in your current situation?

V43 69V44 71V45 73

Question 22 How knowledgeable are you with regard to **assessment** in OBE?

Very knowledgeable	1
Reasonably knowledgeable	2
Not at all knowledgeable	3

V46 75

Question 23 How many national documents on OBE and assessment have you studied?

V47 76

Question 24 If your answer in **Question 23** was one or more, give the title of the document that you found most useful. Motivate your answer.

V48 78
 V49 80

Please express your opinion on assessment in OBE in Questions 25 to Question 28 using to the following scale.

1 = SD = Strongly disagree

2 = D = Disagree

3 = U = Unsure

4 = A = Agree

5 = SA = Strongly agree

Question 25 My knowledge on assessment in OBE allows me to make a judgment about assessment strategies in OBE

SD	D	U	A	SA
1	2	3	4	5

V50 82

Question 26 OBE is just another method of assessment which will deliver the same results.

SD	D	U	A	SA
1	2	3	4	5

V51 83

Question 27 OBE is an improvement of the former system and will generate improved results.

SD	D	U	A	SA
1	2	3	4	5

V52 84

Question 28 OBE has less efficient assessment strategies and will impair results.

SD	D	U	A	SA
1	2	3	4	5

V53 85

SECTION C: YOUR ASSESSMENT STRATEGIES

Please answer this section on your personal assessment strategies. For the sake of consistency, please keep the same class in mind throughout the questionnaire.

Question 29 To what extent have you successfully implemented OBE assessment strategies in your own assessment of mathematics students?

more than 75% implemented	1
65%-74% implemented	2
50%-64% implemented	3
25%-49% implemented	4
less than 25% implemented	5

V54 86

Questions 30 to 56

Which of the following strategies or forms of assessment have you **implemented** in the past **12 months** as part of the collection of marks for your students?

Q number	Assessment type	Yes	No
30	Formative assessment	1	2
31	Summative assessment	1	2
32	Baseline assessment	1	2
33	Diagnostic assessment	1	2
34	Recognition of prior learning	1	2
35	Multiple choice questions	1	2
36	Scoring rubrics	1	2

V55	<input type="checkbox"/>	87
V56	<input type="checkbox"/>	88
V57	<input type="checkbox"/>	89
V58	<input type="checkbox"/>	90
V59	<input type="checkbox"/>	91
V60	<input type="checkbox"/>	92
V61	<input type="checkbox"/>	93

Questions 30 to 56 (cont.)

Which of the following strategies or forms of assessment have you **implemented** in the past **12 months** as part of the collection of marks for your students?

Q number	Assessment type	Yes	No
37	Performance-based assessment	1	2
38	Oral assessment	1	2
39	Student self-assessment	1	2
40	Dynamic assessment	1	2
41	Error analysis	1	2
42	Group discussion	1	2
43	Observing and questioning	1	2
44	Mathematics logbooks	1	2
45	Peer assessment	1	2
46	Mathematics journals	1	2
47	Mathematics portfolios	1	2
48	Common task assessment (CTA)	1	2
49	Tests	1	2
50	Assignments	1	2
51	Projects	1	2
52	Tutorial tests	1	2
53	Worksheets	1	2
54	Scholastic achievement tests	1	2
55	Observation	1	2
56	Essay type questions	1	2

V62		94
V63		95
V64		96
V65		97
V66		98
V67		99
V68		100
V69		101
V70		102
V71		103
V72		104
V73		105
V74		106
V75		107
V76		108
V77		109
V78		110
V79		111
V80		112
V81		113

Question 57

Rank the five most important assessment strategies, in your situation, mentioned in **Questions 30 to 56** and give examples to illustrate **how you have used** these strategies in your current situation.

Rank	Question number	Example									
1			V82 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 114 V83 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 116								
2			V84 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 118 V85 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 120								
3			V86 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 122 V87 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 124								
4			V88 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 126 V89 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 128								
5			V90 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 130 V91 <table border="1" style="display: inline-table;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> 132								

Question 58

To which extent do you implement continuous assessment (CASS)?

I implement only continuous assessment (CASS).	1	
I include aspects of CASS in my assessment strategy.	2	
I implement CASS occasionally.	3	
I do not implement CASS at all.	4	

V92

--

 134

Question 59 What percentage of your students' final mark is generated by CASS?

	V93	<input type="text"/>	<input type="text"/>	<input type="text"/>	135
--	-----	----------------------	----------------------	----------------------	-----

Question 60 Your assessment design consists of

a number of different assessment opportunities and a formal examination	1	V94	<input type="text"/>	138
continuous assessment without a formal exam/final test	2			
a combination of the two types mentioned above	3			
	4			

Question 61 How many of each of the following assessment opportunity types do you have in a semester? Indicate a zero if you do not have a specific type.

Assessment opportunity/type	Number		
Tests		V95	<input type="text"/>
Assignments		V96	<input type="text"/>
Examinations		V97	<input type="text"/>
Portfolios		V98	<input type="text"/>
Worksheets		V99	<input type="text"/>
Projects		V100	<input type="text"/>
Oral presentations		V101	<input type="text"/>
Research papers		V102	<input type="text"/>
Tutorial tests		V103	<input type="text"/>

Question 62 Which types of questions are included in your mathematics examination papers?

Please use the following code to answer the next question.

1 = A = Always

2 = O = Often

3 = S = Seldom

4 = N = Never

Types of Questions	A	O	S	N
Short questions with simple answers	1	2	3	4
Questions involving subsections	1	2	3	4
Problem-solving questions similar to those done in class	1	2	3	4
Problem-solving of "new" problems	1	2	3	4
Multiple choice questions	1	2	3	4
Open-ended questions	1	2	3	4
Essay type question	1	2	3	4
Other:	1	2	3	4
If "Other", please provide an example and mark 1, 2, 3 or 4				

V104	<input type="checkbox"/>	157
V105	<input type="checkbox"/>	158
V106	<input type="checkbox"/>	159
V107	<input type="checkbox"/>	160
V108	<input type="checkbox"/>	161
V109	<input type="checkbox"/>	162
V110	<input type="checkbox"/>	163
V111	<input type="checkbox"/>	164
V112	<input type="checkbox"/>	165

Question 63 Indicate/explain how a student's **final mark** is calculated.

V113	<input type="checkbox"/>	<input type="checkbox"/>	167
------	--------------------------	--------------------------	-----

Question 64 Do you allow students to rewrite a test if they have performed badly in that specific test?

Yes	<input type="checkbox"/>	1
No	<input type="checkbox"/>	2

V114	<input type="checkbox"/>	169
------	--------------------------	-----

Question 65

If your answer to **Question 64** was "Yes", explain your criteria for the decision.

--	--

V115	<input type="text"/>	<input type="text"/>	170
V116	<input type="text"/>	<input type="text"/>	172
V117	<input type="text"/>	<input type="text"/>	174

Question 66

Do you make a selection from all the assessments done to compile the **final mark**? Example: Use the best three of the possible four tests.

Yes	1
No	2

V118	<input type="text"/>	176
------	----------------------	-----

Question 67

If your answer to **Question 65** was "Yes", explain your criteria for the decision.

--	--

V119	<input type="text"/>	<input type="text"/>	177
V120	<input type="text"/>	<input type="text"/>	179
V121	<input type="text"/>	<input type="text"/>	181

Please explain certain aspects of your personal assessment in Questions 68 to Question 73 according to the following scale.

1 = SD = Strongly disagree

2 = D = Disagree

3 = U = Unsure

4 = A = Agree

5 = SA = Strongly agree

Question 68 The time limit is indicated on my test papers

SD	D	U	A	SA
1	2	3	4	5

V122 183

Question 69 The test paper has a cover page.

SD	D	U	A	SA
1	2	3	4	5

V123 184

Question 70 Instructions and examination rules appear on the cover page.

SD	D	U	A	SA
1	2	3	4	5

V124 185

Question 71 Adequate space (fill-in papers) is provided to complete the answer.

SD	D	U	A	SA
1	2	3	4	5

V125 186

Question 72 The memorandum of the test is discussed with the students when they receive their scripts.

SD	D	U	A	SA
1	2	3	4	5

V126 187

Question 73 Students get the opportunity to query their marks and marking in general.

SD	D	U	A	SA
1	2	3	4	5

V127 188

Please explain certain aspects of your personal assessment in Questions 74 to Question 76 according to the following scale.

1 = SD = Strongly disagree

2 = D = Disagree

3 = U = Unsure

4 = A = Agree

5 = SA = Strongly agree

Question 74 The students get to keep their test scripts.

SD	D	U	A	SA	V128	<input type="checkbox"/>	189
1	2	3	4	5			

Question 75 The total mark for the test is indicated on the test.

SD	D	U	A	SA	V129	<input type="checkbox"/>	190
1	2	3	4	5			

Question 76 The assessment policy of your department is known to you.

SD	D	U	A	SA	V130	<input type="checkbox"/>	191
1	2	3	4	5			

Question 77 How do you communicate **assessment criteria** to your students? **You may mark more than one option.**

verbally in class, during the week before the test	1	V131	<input type="checkbox"/>	192
by means of the study manual	2	V132	<input type="checkbox"/>	193
by means of a separate leaflet	3	V133	<input type="checkbox"/>	194
not at all	4	V134	<input type="checkbox"/>	195
it is published on a notice board	5	V135	<input type="checkbox"/>	196
it is published on my office door	6	V136	<input type="checkbox"/>	197

Question 78

Anything else that you want to bring to my
attention

V137

198

THANK YOU VERY MUCH FOR YOUR TIME

ONDERHOUDSPROTOKOL: DOSENTE

BEPLANNING:

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Hoe sien die dosent die rol van assessorering in sy/haar vak?	Wat is die doelstelling met assessorering in jou spesifieke vakgebied?	Is dit die enigste doelstelling? Vertel my meer daarvan? Hoekom sê jy só? Is jy seker van jou saak?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Wie speel almal 'n rol in die assessoringsproses?	Wie behoort in die assessoringsproses van die leeruitkomste betrokke te wees?	Is dit die enigste rolspeler(s)? Is daar niemand anders wat sou kon meewerk nie? Kan jy aan geen alternatiewe dink om assessoringsbetrokkenheid uit te brei nie?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Weet dosente van die bestaan van verskillende tipes leer en dat 'n mens doelbewus verskillend moet assesseer om verskillende tipes leer na te speur?	Watter tipe(s) leer assesseer jy hoofsaaklik?	Is dit die enigste tipe wat jy assesseer? Watter ander tipes leer assesseer jy moontlik ook? Van al die tipes wat jy genoem het, watter tipe maak die belangrikste deel van jou assessorering uit?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Gebruik dosente verskillende assessoringsstrategieë? Het dosente al gedink oor hoe leeruitkomste bepalend in jou keuse van 'n assessoringsstrategie kan wees?	Watter assessorings-strategie(ë) gebruik jy om leeruitkomste te assesseer?	Is dit die enigste strategie wat jy gebruik? Kry jy die gewensde resultate met hierdie strategie? Het jy al ander strategieë oorweeg/gebruik? Sal jy ander strategieë oorweeg/gebruik?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Is dosente enigsins bewus daarvan dat	Watter assessorings-strategie(ë) gebruik jy om die leerkwaliteit mee te	Is dit die enigste strategie wat jy gebruik? Kry jy die gewensde resultate met

leerkwaliteit ook geassesseer behoort te word?	assesseer?	hierdie strategie? Het jy al ander strategieë oorweeg/gebruik? Sal jy ander strategieë oorweeg/gebruik?
--	-------------------	---

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Hoe word merkereenvormigheid gefasiliteer?	Is dit gewens dat verskillende kollegas verskillende punte aan 'n identiese antwoordstel toeken?	Hoekom verskil die puntetoekenning? Is dit regverdigbaar? Hoe kan hierdie diskrepansie oorkom word?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Het dosente al assessoringskriteria gebruik?	Het jy al voorheen of sal jy oorweeg om assessoringskriteria in die assessorering van jou vak te gebruik?	Wat was die opdrag? Hoe het die kriteria daar uitgesien? Het die gestelde kriteria aan jou doeleindes voldoen? Is daar iets wat jy sou wou verander as jy dit weer doen? Hoe gereeld maak jy van kriteria gebruik?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Hoekom maak dosente van assessoringskriteria gebruik en om watter rede?	Wat beskou jy as die belangrikste funksie/taak van assessoringskriteria?	Is dit die enigste funksie? Is dit die belangrikste funksies? Watter ander funksies sou daar kon wees?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Verskaf dosente doelmatige terugvoer aan leerders?	Wat is jou mening oor terugvoer aan studente?	Wat is die aard van jou terugvoer? By watter geleenthede verskaf jy terugvoer? Wat is die omvang van jou terugvoer?

Wat wil ek weet?	Watter vraag sal ek vra om uit te vind wat ek wil weet?	Watter deurdringende opvolgvrae gaan ek in gedagte hou?
Hoe effektief beskou die dosent sy/haar assessorering?	As jy jouself moet beoordeel op 'n tien-punt skaal, hoe effektief dink jy is jou assessorering? Motiveer jou antwoord.	Hoekom sê jy só? Is dit die enigste/belangrikste rede? Vertel my meer daarvan? Is jy seker van jou saak?

VERKLARING

Hiermee verklaar ek,

Christiaan Gerhardus Joubert,

dat ek as eksterne kodeerde tydens die analise van die data in my Cecilia Jacomina Louw se proefskrif opgetree het. Ons het moontlike kategorieë en subkategorieë geïdentifiseer en op 'n wetenskaplik-gefundeerde wyse daargestel. Voorts is die tendense wat in die data voorkom so akkuraat moontlik weergegee op grond van die kwalitatiewe wyse van analise wat onderneem is.

Vriendelik die uwe,

.....
CG Joubert

Oktober 2006

RIGLYNE VIR DIE MODERATOR (Agenda)

1 Bekendstelling

- 1.1 Verwelkoming
- 1.2 Stel die doelstellings van die Fokusgroeponderhoud.
- 1.3 Riglyne vir die duur van die onderhoud
 - 1.3.1 Klankopname se prosedure
 - 1.3.2 Slegs een persoon per keer wat praat
 - 1.3.3 Respek vir ander se opinies, praat oor 'n saak, nie 'n persoon nie.
- 1.4 Teken die instemmingvorms.

2 Opwarming

- 2.1 Stel die deelnemers op hul gemak.

3 Uitklaring van terminologie

- 3.1 Gee 'n oorsig oor die tersaaklike terminologie.
- 3.2 Verskaf definisies van assessering en evaluering, onder meer.
- 3.3 Verskaf die grense van die gesprek:
 - 3.3.1 Ons praat nie "merge" nie, nie sillabusse of hulpbronne nie.

4 Stel maklike niebedreigende vrae.

- 4.1 Wat was jul opinie van die slypskool. Ons gee tien minute om dit van ons gemoedere af te kry voordat ons vandag se besigheid op die tafel plaas.

5 Stel moeiliker vrae.

- 5.1 Vra nou die eintlike vroegte vir die dag.
- 5.1.1 Dink julle die aard van ons assessering voldoen aan die doel van ons assessering?
- 5.1.2 Wat is die aard, en wat is die doel?
- 5.1.3 Hoe kan ons ons effektiwiteit verbeter, sonder om harder te werk?
- 5.1.4 Wie van julle is gereed om iets nuuts te probeer?
- 5.1.5 Wat beplan jy om te probeer?

6 Samevatting

- 6.1 Hou die algemene tema van die gesprek aan die deelnemers voor.
- 6.2 Verseker dat alle gesprekspunte aangeraak is.

7 Deelnemerkontrole

- 7.1 Kontroleer hoe deelnemers die gekose sake beleef het.

8 Sluiting

- 8.1 Verseker weer anonimiteit.
- 8.2 Beantwoord enige verdere vroegte.
- 8.3 Spreek dank teenoor die deelnemers uit.

**BEPLANNING VIR DIE FOKUSGROEPONDERHOUD MET FASILITEERDERS
WAT DIE SLYPSKOOL BYGEWOON HET, MAAR NIE WISKUNDE
FASILITEER NIE**

1 Algemene doelstelling

Die doelstelling van hierdie fokusgroeponderhoud is om fasiliteerders van TUT se gevoelens jeens assessering vas te stel. Ek is veral daarin geïnteresseerd om uit te vind of hulle tevrede is met hul huidige assessering nadat hulle die slypskool bygewoon het. Ek wil ook vasstel wie beplan om iets nuuts met betrekking tot assessering in die volgende semester te doen.

2 Verfynde doelstellings

Ek wil meer van die aard van hul assessering die doel daarvan en die effektiwiteit daarvan weet

3 Dit wil ek weet:

- 1 Dink julle die aard van ons assessering voldoen aan die doel van ons assessering?
- 2 Wat is die aard, en wat is die doel?
- 3 Hoe kan ons ons effektiwiteit verbeter, sonder om harder te werk?
- 4 Wie van julle is gereed om iets nuuts te probeer?
- 5 Wat beplan jy om te probeer?

4 Dit wil ek nie weet nie:

- 1 Enigiets in verband met sillabusse
- 2 Probleme met betrekking tot die *merge*
- 3 Probleme met betrekking tot hulpbronne

5 Watter tipe uitkomste verwag ek?

- 1 Om beter begrip te hê van die doel en aard van hul assessering.
- 2 Om grondige data te kry sodat ek dit met my ander data uit die persoonlike onderhoude kan vergelyk.
- 3 Om by die deelnemers die gedagte te laat posvat dat daar ruimte vir verbetering in hul assessoringsstrategieë is.

6 Hoe gaan ek die data/inligting gebruik?

- 1 Ek gaan vasstel hoe sterk die deelnemers oor assessoringspraktyke voel en sodoende persone identifiseer wat nuwe praktyke op die proef wil stel.

Gedeeltes uit fokusgroep 1 se transkripsie

Die onderhoude het op 8 November plaasgevind in die Raadsaal van gebou 5 op die Pretoria kampus van TUT.

Die respondent wat teenwoordig was, was R1, R3, R5, R6, R7, R10. Hulle is almal fasiliteerders in die Fakulteit van Ingenieurswese en doseer vakke wat sterk op wiskunde staatmaak. Hulle was almal teenwoordig by die slypskool en ek het 'n persoonlike onderhoude met hulle gevoer. Hulle behou dieselfde kode vir die duur van die studie, terwille van kontinuïteit en anonimititeit.

Twee respondentes was afwesig, een is 'n dosent van die Pretoriakampus wat aangedui het dat hy moontlik nie gaan kom nie, aangesien hy besig is om antwoordstelle na te sien. Die ander persoon het net nie opgedaag nie.

Die sessie het om 09:00 begin met sap en eetgoed en toe het ek die klankstelsel aan hulle verduidelik. FM was toe nog nie daar nie. Hy het laat gekom, maar ek het hom toegelaat, want ek wou nie 'n incident veroorsaak nie.

Ek het aanvanklik verskoning gemaak dat die onderhoude in Engels gaan wees, ter wille van FP wat nie Afrikaans magtig is nie. Ek het die respondentes aangemoedig om wel Afrikaans te gebruik indien hulle sukkel om hulself in Engels uit te druk en het belowe om dit dan vir FP te vertaal. Dit het egter nooit gebeur nie.

Enkele grepe uit die data word vervolgens aangebied.

R5: I just want to say if you look at various methods of assessment for instance formative assessment ... examinations papers ... Uhme If that is sort of the norm throughout the institution or in a department; it's very difficult to just go to other methods of assessment If you want to implement that, but the next subject, next lecturer is not doing that you might get queries as to why you are doing that. Also when you want to change assessment methods, it must go through faculty board and senate. You can't just decide next semester I want to change my method of assessment. It is a whole process and procedure. So just to change and have your own sort of assessment strategy is very difficult.

Mod: But don't you have freedom in the compilation of your marks? So in other words there's going to be 3 major tests and exams, but some 20% can be generated through whatever ... assignments or practical work. Do you have that?

R5: Yes, and again there the following problem. Compilation of the semester mark will be 4 tests uhme ..average of the 4 tests. Might be then and that's now being a HOD students will come to you and say that lecturer A took the three best tests and why can lecturer B not also take the three best tests? Then I always have to explain that each lecturer is the manager of his subject. He can do as he ... not as he like ... but sort of within quality parameters. But that's the problem uhme ... ja you can but surely you have to inform the students in the beginning of the semester. But the students are very reluctant to change or not being treated consequently [he meant consistently] throughout the whole course.

R7: Yes, I would like to agree with that. You know uhm ...even if you ... if you look in a department where lecturers have the same group of students and you look at the average for specific subjects and you compare it with each other You know there are some of these lecturers that I think that should not be here. Uhmm... if we want to be an academic institution. Aghh the other problem ...uhhm... is ahh you know ... The reason why we are having this discussion is I think because the students .. the poor quality of students that we've got. It's creating a huge problem because these students does not pass anymore. So now we must be creative and try all other methods to try and force the ... you know the through-put-rate.

R5: But even worse ... Maybe I'm out of line now but I also did a course where you will now either be found competent or not yet competent. Now what a joke! Because what will

inspire students? Even kids at school where they now only get 1, 2, 3 or 4 for a mark. What inspires or motivates students to work towards a 80% to put in more effort. And not yet competent means if I have a student and his there three or four times I start to feel guilty because then the assessor, the lecturer fails because he can not get this person through; eventually force this person through. Hopefully we won't really go that route soon, since that's terrible.

- R1: LB but if you want to evaluate that project work in a proper manner, the way you say, it becomes a time consuming thing. It becomes a tremendous tedious operation. You can't be one guy for number one, you must be three guys sitting there for weeks ...it's not a joke anymore.
- R10: But you see DO, it didn't start here. It starts on school. On school you start learn the students ... Let we say mathematics. You have learnt in your days 2×6 is this, 5×6 is this... Now in this days he learn him to count on his fingers. If he says 6×4 then he must say 4, 8, 12, to come to the answer. You see this is where the difference come. Another problem in our schools is ... is that umme... teachers at school say now to our children don't worry, if you have 35% for this subject, you pass.
- R10: Umme it's what I say... in the beginning. There's only one way ... we're going back to national exams. Because then the quality is the same, the standard is the same.
- R7: I think firstly what we should do, we should look at the raw material that we get into our system. We must decide what we're going to do with that raw material. Either put that raw material through a ugh... a pre-university or whatever and then I think after that, make a selection, out of those people. So even the people that come here ... it's not an automatic entry into the system. And then from there on I think that we should write exams at the end of the day ... do away with all fancy types of evaluation.

Gedeeltes uit fokusgroep 2 se transkripsie

Hierdie FGO is in die lokaal van Telematiese onderrig gehou en 'n video-opname is daarvan gemaak om later *verbatim* te transkribeer.

Die respondenten het eers verversings geniet en die klankstelsel en prosedure is daarna verduidelik. Die respondenten is almal wiskundefasiliteerders en hulle het ook hulle kodes afkomstig uit die persoonlike onderhoude behou, naamlik R2, R4, R8, R9, R11, R12, R13, en R14.

Enkele grepe uit die transkripsie word vervolgens aangebied.

- R11: And you include assignments, whatever we use ... I think we can't do more. You test all those things ... should! Depending on the paper. Because I have a bee in my bonnet today about the Maths 3 paper and he didn't test synthesis and analysis and all those things. It was not testing that. But it was the examiner's mistake.
- Mod: So what can be done to avoid that kind of problem?
- R11: It's the moderators duty to pick up on that not just a rubber stamp. Another possibility is that we get together as a group where I can open my mouth when the paper is being set.
- Mod: So like a panel discussion.
- R11: Yes, but usually we are pressed for time when it comes to setting the exam paper and then there is no time for a panel discussion.
- R2: Yes, is that the case everywhere?
- R9: Yes, and we also don't see the papers before it's handed in. You know it doesn't help to try to change it afterwards. I think we need to discuss it before it's handed in.
- R12: What about the security of the paper?
- R11: At some stage you must decide to trust somebody or not. Because even if I set the paper, how can you trust me to honest?
- R4: Exactly. Everybody is permanent staff members. All permanent staff members should as far as I'm concerned be involved in a panel discussion about what is in this paper. It

shouldn't be a surprise to me what's in the paper if XX sets the paper, it's ridiculous. I mean why doesn't he trust me? I should trust him. Especially now with this problem of ...of ...of different learning sites all over the place. I mean it is so easy for him not to know what I have done in my classes and asking questions and something went wrong even though we have common study guides and so on. It's easy for something to go wrong and then afterwards we have to adapt marks and so on. There should be a panel discussion with all permanent staff members involved. If you don't trust your permanent staff members, you shouldn't appoint them as examiners anyway.

- Mod: When should this panel discussion take place?
- R2: Very early in the semester, cause then you will have the idea of what is .. what is the emphasis of the other person . I can have a study guide and I can interpret it totally different than ZZ is going to interpret it. So if you have that discussion early and you start setting the paper early, then it would really be helpful for everybody will then know what will the emphasis be.
- R11: I have a problem with that because you're suppose to cover the whole ... and everything in the syllabus is suppose to be equally important. And I ...just in the same paper nothing was asked about probability, which I'm very angry about...but for me the purpose for talking about the exams at the beginning of the year is to ensure that everybody is on the same level, not to see what's emphasize and what not. Because some people's pet topic is ...complex numbers, while it is not mine ...but if you all talk about it and you know there is 6 marks for that in the exam. Six out of 120, you know how much time to spend on it.
- R2: You moderate on three different standards.
- R4: Yes, exactly and then I decided we must definitely have discussions next time.
- R14: It is just not always practical. One of our colleagues he got 3 different papers on the same day and two were from one diploma and a third from another diploma. And we have that marking schedule you can mark up to this date and moderate up to that date. So if he has to attend all these discussions, he will never finish.
- R11: And in the past we got the memos before the students were finished, no the latest is you only get it after the answer books have been submitted to the exam section. If we can get it after one hour of writing we can do a local memo discussion so long. But its not ...And it's any case it is nice to have but you can't expect the people from Witbank and Nelspruit to come for a memo discussion.
- R13: I think Mech does not have a problem. We write a synchronized test, same date, same time.
- R2: You see Mech has a test week, so it's the same test.
- R4: Is it? So you have a test week on Soshangwe also.
- R2: Yes, and that test week is the same week.
- R11: We have it on 5 campuses.
- R11: On GaRankuwa they have a problem. I know they don't have enough venues where all their students can fit in. They have to use lecture rooms.
- R8: Yes, and sometimes when some people have test week, you can't even use your own venue, cause they are using it. So, the problem is that in fitting ... even if you write the common test. You have to book like in advance a venue with the guys from exams to get you a venue before you even write the test. So writing common tests sometimes is difficult. You find that you have to squeeze it in the morning, especially if you are writing a test. You have to book in the morning if you all are writing in the morning. If you write in the afternoon and others are writing in the morning, it is unfair.

Gedeelte van kodering van fokusgroep 1			
Kategorie	R1	R7	R5
Onsekerheid		Wat bereik? 1:a:8 Ons iets leer of by ons inligting kry? My leer om te assesseer? 2:c:14	Oor anonimititeit 4:j:98
Akademiese instansie vs besigheid		Wat is ons? 5:m:118	
Akademiese standaard vs geld		Akademies gesproke sal ons volgens standaard assesseer 5:n:120 Besigheid sal volgens maksimum inkomste assesseer 5:o:123	
Gewoonte			Almal assesseer volgens 'n metode, kan 1 verander? 6:p:136 Studente sal vra hoekom maak X so? 6:q:140
Probleme Burokrasie	<p>'n Mens leer niks by die advieskomitee nie 40:t₁⁵:1198.</p> <p>Advieskomitee moet as assessors ingespan kan word, hul word tans verkeerd gebruik 40:t⁵:1185.</p>	<p>Die regering het 'n groot fout gemaak met UGO hulle laat die nasie in die steek 21:e⁴:623</p> <p>UGO benadeel armes nog meer en rykes trek voordeel 22:f⁴:644</p> <p>In skool word konsepte nie meer geoefen nie 25:k⁴:737</p> <p>Elke kind werk nou teen eie tempo,</p>	<p>Verandering moet deur senaat en fakultetsraad goedgekeur word 6:r:141</p> <p>Om eie assessoreringstrategie te hê is proses en swaar 6:s:144</p> <p>As jy anders maak, gaan HOD kom vra hoekom 6:t:151</p> <p>Party dosente vat 3 uit 4 toetse dan vra studente hoekom nie jy ook nie</p>

		assessering is 'n nagmerrie 26:l ⁴ :765 Niemand wil meer verantwoordelikheid neem nie, DoE, skole ens 27:n ⁴ :801	6:u:152
Kommunikasie		Regeringsliggame behoort meer betrokke te wees, ons moet help om hele Afrika op te hef 35:g ⁵ :1050. As jy advieskomitee wil laat werk, moet jy die saad by hul plant 40:u ⁵ :1201.	Studente moet aan begin van semester weet hoe assessering en samestelling van punte gaan lyk 6:v:156.
Kwaliteit	Doelwit: 100% 'n vaste slaagsyfer 7:cc:188 Ook die idee dat >slaagsyfer = beter dosent 8:dd:193 Kwaliteit van studente is nie korrek nie 8:ee:213. Ek verdeel al punte in groepwerk op grond van die kwaliteit van die kopie 10:rr:283 Almal reeds in <i>pass rate</i> strik gevang, jy weet hoe om vraag te vra, anders kan hul nie antwoord nie 11:tt:302 M-studie toon dat gegradsueerde nie eers basiese kennis het nie 12:xx:340.	Studente nie op merk nie en nou word ons gedreig met deurgangtempo 8:gg:221 Allerhande snaakse assessorings word gedoen om slaag te vergemaklik 9:hh:229. Studente skryf af en kopieer en begryp nie die probleem nie 9:ii:239. CASS word nou gefragmenteerde assessorings, die hele sillabus word nie gelyk getoets nie 9:jj:244. Sekeres slaag wat nie in industrie hoort nie 9:ll:251. Standaard het geval 12:ww:323.	Skoolkinders word ongemotiveerd as gevolg van rating 1-4 11:uu"313 Hoeveel keer sal jy iemand laat "not yet competent" wees, voordat jy hom laat slaag? 11:vv:315

	<p>In Ingenieurswese moet daar 'n hoër slaagsyfer as 35% wees 17:q³:491.</p> <p>Graad 12 is Nasionale eksamen en dis 'n gemors 20:x³:569.</p> <p>Verbeter kwaliteit deur die skep van 'n kultuur van uitnemendheid, beloon uitnemendheid 34:c⁵:1000.</p> <p>Kwaliteit van Ingenieurswese kan verhoog deur meer klem op toepassings en die vaardighede van toepassings te lê 34:d⁵:1016.</p> <p>Trek behoorlike profiel vir die ingenieursberoep en keur daarvolgens 35:f⁵:1040.</p> <p>'n Goeie dosent se assessering is in ooreenstemming met sy (<i>sic</i>) aanbieding 39:r⁵:1155</p>	<p>Ongelukke vind plaas weens onkunde en oorhaastigheid in terme van R/sent 19:w³:560.</p> <p>Swak studente maak dit onmoontlik om akademiese standaarde te handhaaf 23:g⁴:657</p> <p>Tans oudit op graad 6 en dis pateties 31:u⁴:905.</p> <p>Om kwaliteit studente te kry, moet ons ons toelatingskriteria opskerp 32:x⁴:947.</p> <p>Sorg dat jou kwalifikasie iets werd is, dan sal jy kwaliteit studente lok 33:z⁴:969.</p> <p>Kan kwaliteit studente werf met behulp van insetiewe 33:a⁵:973.</p> <p>Ons moet ons sillabusse gereeld opdateer en byhou 36:h⁵:1058.</p> <p>Goeie studiemateriaal is belangrik, internasionale handboeke 38:q⁵:1143.</p>	
Agterdog	<p>Nuwe stelsel net daar om swak studente toegang tot hoëronderwys te gee 20:a⁴:592.</p>	<p>Sommige dosente hoort nie hier nie 8:ff:218.</p> <p>Die staat gaan waarskynlik ons seleksietoets staak 21:b⁴:601.</p>	<p>Hoekom moet ons ons effektiwiteit verbeter, sê jy ons is nie effektief nie? 19:t³:532</p>

		<p>Klasgemiddeld nou weg, mag nie meer leerlinge vergelyk nie, dit vat motivering weg 28:p⁴:820.</p> <p>Die regering bring nou Kubane ensovoorts in om gebrek aan te vul, vir wat? 32:w⁴:936.</p>	
misverstande	Studente se arrogansie om na Institute of Steel se CEO te gaan met hul taak 11:ss:292.	<p>CASS word nou gefragmenteerde assessering, nie oor hele sillabus nie 9:jj:244.</p>	<p>Seleksietoets kan dalk ly. Minister van Onderwys sê instansies moet self plan maak, sy soek deurvloei 21:c⁴:606.</p>
persepsie oor studente	<p>Studente ken 'n klomp gefragmenteerde goed, kan nie integreer nie 13:b³:375.</p> <p>Ons onderskat die taalimpak 14:c³:380.</p> <p>Hul lees (ook in eksamens) sonder insig 14:d³:390.</p>	<p>Laks skryf uit handboek af, verstaan niks nie 13:yy:336.</p> <p>Geen oorspronklike poging nie 13:zz:359.</p> <p>Seleksietoets gaan later niemand kan toelaat nie, die kwaliteit van die skole af is so swak 21:d⁴:610.</p>	
assessering	<p>Om projekte reg te doen vat baie tyd, wat ons nie het nie 15:g³:418.</p> <p>Om projekte reg te assesseer vat 3 persone vir weke 15:h³:420.</p> <p>In Ingenieurswese moet daar 'n hoër slaagsyfer as 35% wees 17:q:491.</p>	<p>As jy min studente het, kan dit in 1 week gedoen word, 'n hele week met hulp van lede van industrie 15:i³:429.</p> <p>Op <i>survey trips</i> na Toppieshoek assesseer jy tot die student slaag, kan nie meer so werk nie 15:j³:435.</p>	<p>Studente moet geleer word hoe hul geassesseer gaan word 15:k³:438.</p> <p>Leer hul hoe werk oop en toeboek-eksamen 16:l³:447.</p> <p>Wees eksplisiet in wat van hul verwag word 16:m³:457.</p>

Kodes vir persoonlike onderhoude per vraag						
	R6	R7	R8	R9	R10	R11
1	Kennis kan weergee 34:a:4 Studente 'n bruikbare produk wees 34:b:5 Wil weet of ek suksesvol in assessering was 34:c:7.	Begrip 47:a:4 Promosie 47:b:5 Bemeesterig 47:c:8 Remediëring 48:d:10 CASS 48:c:13	Kommunikasie tweerigting 55:a:5 Het hul die inligting gesnap? 55:b:6	Om leer by studente te sien 65:a:3. Begripsontwikkeling 65:b:5	Bepaal wat studente weet 70:a:2. Kan hul inhoud verstaan en toepas 70:b:4 Toepas en gebruik in industrie 70:c:5 Wil nie bewyse doen nie 70:d:12.	Ek is verplig 76:a:2. Studente weet waar hul staan 76:b:3. Diagnosties vir my 76:c:5. Wil vordering meet 76:d:7.
2	Lektor eerstens 34:d:10 Modereer ter wille van deursigtigheid 34:e:12 Departementshoof 34:g:25 Studente moet pret hê 35:h:36 Nie studeer nie 36:s:81	Studente doen take 48:k:37. Studentvoordragte 54:gg:190. Nie eweknie-assessering 54:hh:193. Wel selfassessering en standaardafwyking 54:ii:198. Persepsiepunt 54:kk:208. Take tydrowend 54:ll:209.	Fasiliteerdeerder 55:c:10 Ander instansies en industrie 55:d:13 Studente antwoord vrae 55:e:18. Eksamens is nie geskik vir assessering 55:f:22. Verskillende mind-sets 55:g:23. Angs 55:h:26 Eweknie-assessering net diagnosties :39	Dosent, student en studente-assistent 66:d:11. Gebruik soms self-assessering 66:e:12.	Lektor 70:e:18 Student moet weet waaroer geassesseer word 70:f:19. Gee ou vraestel 70:g:22. Belangrikste is dat student weet hoe punte gegee word 70:h:23 Inkonsekwente bepunting op kam-pusse 70:i:25.	Dosent, student en beide departemente 76:e:10. Student moet leer 76:f:13. Self en eweknie werk nie in praktyk, te min tyd 76:g:16. Hul dink dis grap 76:h:17. Hul moet geleer word hoe, nog tyd 77:i:18.

	Wisk moet prakties wees 35:i:41. Modellering van wiskunde 35:j:43 Sakrekenaar verspot maklik 35:k:46. Woordsomme in wiskundetaal kry 35:l:47. Bemeesteringsleer 36:r:74. Interpretasies 38:z:141 Nooit leerwerk nie 40:ll:197.	Studente projekwerk 48:k:37. D-dates 48:i:29. Kennis en toepas 52:bb:142	Praktiese toepassings 58:hh:113 Toepas in ingenieurswese 58:ii:117	Kennis, begrip, Toepas ensovoorts. Bloom se onderste drie vlakke 66:f:17. Studente is treurig 66:g:21.	Hoofsaaklik kennis 71:r:57. Begrip van metodes 71:r ₁ :59. Toepassings in industrie 72:t:64.	Studente doen <i>surface learning</i> 77:l:24. Jy hoop op <i>deep learning</i> 77:m:27. Toepassings wat uit kennis vloeи 77:o:35.
4	Toets, eksamen en taak 39:aa:152 Kleiner klasse mondelinge aanbied (BTech) 39:bb:154. Groter klas nie tyd mondeling 9:cc:15.	Cass 48:e:13 Studente projekwerk 48:k:37. Toetse en eksamen 52:cc:150	Toetse en eksamen 56:l:47. Behoort beter manier te hê 56:m:50.	Quicktests elke week ter wille van huiswerk 66:j:27. Groot toetse en vrae 66:k:28. Portefeuilje al probeer, maar baie werk 66:l:32.	Twee groot toetse, take en klastoetse 72:v:69. Prakties 72:w:71. Prakties is op sillabus geskoei 72:x:72. Prakties speel groter rol 72:y:85.	Take, toetse, eksamen en prakties 77:p:37. Eerstejaars moet afgeleides mondelings ken 77:q:38.

				pf baie werk 66:m:35 groepwerk 'n gemors 66:n:38 onregv pte verdeling 67:o:44	pr en teorie moet saampraat 72:aa:88 ou vrstel is taak 73:bb:96 groepw lede kry = pt 73:cc:102 oppad na ewekn ass 73:dd:103 bosluisse kry $\frac{1}{2}$ v pt 73:ee:107 kl toets na mod afgeh 76:ccc:186 geen seleksie 76:ddd:187 1 siektoets 76:eee: 188	
5	toepassvermoë 39:dd:161 modellering keer dat jy geleerde bobbej produseer 39:ee:170 gegrief dat dit toeboek is 40:ll:198	baie moeilik, kry nie hul samew 49:o:63 ek motiv hul moeilik 49:p:66 ek weersin om dit te doen 49:q:68 kwal en profnalt is hnd aan hnd	geen beperking op handboeke, ipv "bybel-benad" 56:n:57 skep 'n leer en leeskultuur 56:o:60 daag om buite die boks te dink	loop deur banke as hul werk 67:p:48 klein toetsies diagn 67:q:53 vat 'n week om te merk 67:r:56 nie tyd vir remedier 67:s:58	in prakt kan mens sien 73:ff:112 prakt integr ba vakke, sien kwal 73:gg:116	Is dit hoev pte hul kry? 77:r:43 streng op notasie korrek doen 78:s:50

	jy toets waardes met oopbk 40:mm:205 dosente te onkreatief vir oopboek 40:nn:207 sakrekenaar 'n verskrikking vir ander 40:oo:208 ek help hul met cripnotes 40:pp:209 nie unfair, dis tool of trade 41:qq:212	50:r:74 kan nie verslag skryf 50:s:84 nie PC gebruik 50:t:84 bou standafw in by punte 54:ii:198 persepsiepunt soms 54:kk:208	57:p:62 ontmoedig kunsmatige gebr v kennis 57:q:63 nie spoonfeed nie 57:r:68 leer hul tydsbest 57:s:71			
6	ongewens, 39:ff:175 onvermydelik want sill is net 4 woorde 39:gg:179 elke vak moet 1 dosent hê 40:hh:187 dubbelgr 'n probl ook, kan nie eers telnr onthou nie	Dies dosent moet alle groepe gee 52:dd:156 inkonsekwh mag nie toegelaat word nie 53:ee:171 spandeer	selfde dosent moet alle groepe bedien 59:pp:148 sakrekenaar onregverdigheid 59:qq:152 onregverdigheid teenoor stud 60:rr:159	ongewens, tog gebeur dit 67:t:61 memos moet vooraf bespr word, 67:u:63 het nie energie d/voor nie 67:v:64 sleg vir studente 67:w:66	nie gewens nie 73:hh:119 groepe kan o/handel as pt te laag is, maar dan kwal hy stpt 74:ii:123 moet op 1 kampus sit, in 1 dept en memo bespr 74:jj:129 OF 1 persoon merk 74:jj:130	In wisk nie so grt probl, eksakte syfers 78:t:59 10% te veel, ma 2% aanvb 78:u:66 grensgevalle word weer na gekyk stud nie benadeel 78:v:67

	telnr onthou nie 40:ii:192 onthou is nutteloze vermorsing 40:jj:194 goeie geheue is waarter 40:kk:196			74:jj:130 onregvdig 74:kk:132 memo soms tot anders as eie 74:ll:133		
7	"Jy moet my breinprofiel verstaan" 42:xx:265 ek skryf nie goed neer nie, kyk gr prent 42:yy:270 ek weet op watter vlak my vrae is, sonder om punte te gee of neerskryf my memos werk nie so 43:zz:276	asskrit 48:f:24 uitkoms bekend 49:l:45 neem baie tyd 53:ff:181	ek moes verduid wat dit is 58:jj:120 Het by TWR .. nie so by TP ervaar nie 59:kk:124	ons behoort, want ons stelsel is nie foutloos nie 68:x:73 nog nooit gebr nie 68:y:79 merkers steur hul nie noodw nie 68:z:81	Nee, maar sien dit kom op skool 74:mm:138 dit verplig almal na 1 manier 74:nn:141	Wat bedoel jy met asskrit? 78:w:69 In prakt wel en hul doen moeite 78:x:74 soms te veel klem op versier en inh pateties 79:z:80
8	wil vingerfout penaliseer, kos lewens 43:aaa:292	stud weet presies wat verwag word 49:l:45	fokus stud se energie op NB goed 59:ll:128 nie tyd mors met cover wat slegs prof	merkereenvormig- heid 68:aa:84 vb aan studente	mense kan dan dies merk 74:oo:144	vasstel of stud kan promote 79:aa:84

	beginselfout nog erger 43:bbb:293 professionaliteit en ervaring tel 43:ccc:300 elke memo uniek, gebruik digits uit stnr 44:ddd:309 memo is a spreadsheet 44:eee:318 100 stud in 96 likaal, verhoed afskryf 44:fff:321	gradeer 0-5 ook 49:m:54 grad sluit grys areas uit 49:n:58	cover wat slegs prof look verseker 59:mm:130 verhoed vooroordeel by nasienier 59:nn:134 enige persoon kan dan obj nasien, want krit is eksplisiet 59:oo:136	68:bb:84	dit sal sê as form en skets da moet wees 74:pp:145 stud steur nie, los refs 74:qq:149 involve die student hy weet w/voor pte gaan 75:ss:153	deurhelp werk nie 79:bb:85
9	so gou moontlik 44:hhh:331 voordele en nadele weerskante toe 44:iii:333 inhoud 1e verduid of skrif 1e teuggee 45:jjj:336 skryf min op bord, memo is spreadsheet	ASAP 50:u:88 foute kan regstel 50:v:88 moet jou styl gewoond raak 50:w:89 afskryf 'n probleem 50:x:93 klein gr h/voor	belangrik 57:t:73 eval vir stud 57:u:74 diagn vir dosent 57:v:75 kleiner klasse maak indv komm makliker 57:w:78 NB om name en kulture te ken 57:x:79 persle verh met stud skep 57:z:81	Heg ba wde h/aan 68:cc:86 stud moet h/uit leer 68:dd:87 Hele memo op bord en verduid 75:uu:157 bord en weer verduid 68:ee:89 nie tyd vir indiv probleme nie	kry toets more 75:tt:155 hele memo op bord en verduid 79:cc:87 75:vv:159 stud moet tevrede wees en teken vir klasse te groot	noodsaaklik, hul moet weet wat aangaan 79:cc:87 Bespr memo en altern moontlikhede 79:ee:89 klasse te groot

	spreadsheet 45:kkk:342 verduid net beginsel, nie antw nie 45:lll:348 'n toets =verslag kan nie kop lees nie 45:mmm:352 ass nie perfek nie, wil weet wat hy weet 45:nnn:358 nasienfoute: kultuurverskille 45:ooo:363 die wat kla verstaan nie die werk nie 46:ppp:372 onekonom tydbenutting 46:qqq:373 tipiese foute uitwys 46:rrr:377	geskik 50:y:96 Indiv eval v proj 51:z:112 afskrif van modelantw word verskaf 52:aa:130	skep 57:z:81 feedback ook op toetse, take 57:aa:90 Doen indiv gespr na toets 58:bb:92 kopie van memo aan elk 58:cc:93 puntetoeken duidelik 58:dd:94 hul moet uit foute leer 58:ee:99 ekstra verduid gedoen 57:ff:106 tipiese foute uitgewys 58:gg:109	68:ff:91 snrs kan kopie v memo kry, ma 1ejrs moet verduid word 68:hh:95	pred 75:ww:166 Hulle bekyk toets terwyl memo opskryf 75:xx:168 klem tipiese foute, nie in eks herhaal 75:yy:171	vir 1tot1 79:ff:92
10	8/10 ass nie perfek,	9/10 want ek	8/10 want stud	8/10 na 10jr se	12/10 het	8/10 ek weet wat

	daarom nie 10/10 46:sss:382 beroep vereis hoë verwagt v stud 46:ttt:385 stand het afg 10jr gedaal 46:uuu:394 my slaagsyfer is baie laag 47:vvv:400	spandeer geweldig tyd, meeste v almal 53:ff180	terugvoer ba positief 60:ss:166 stud waardeer sy benadering 60:tt:168	ondervinding weet mens hoe om te merk 68:ii:99 min comebacks van stud af 68:jj:100 het nog onlangs vrstel opgestel wat ba swak resultate behaal het 69:mm:107	databasis en doen baie moeite met opstel 75:aaa:180 nee, 7/10, probeer hard om slimste en domste te akkomod 76:bbb:183	ek wil hê 79:ii:100 dit werk nie altyd nie, dus nie 10/10 79:jj:101 werk te hard vir < 8/10 79:kk:102
kat 11 arrogansie/ mderwdigh	34:g:25 35:m:52 pc 36:q:67 38:y:132 39:gg:179 40:jj:194 "onthou" 40:pp:209 "crip notes" 41:qq:212 41:tt:228 42:xx:265 breinprofiel 43:aaa:292	R7 dikte van taak is eweredig aan pt 54:mm:210	R8	R9 65:c:6 onseker, wou voorberei 67:r:56 vat 1 wk om toets te merk 67:v:64 futloos kan self nie meer indink op vlak v stud nie 69:qq:112	R10 70:d:12 regvdig 70:i:25 " + swak kommun tsn kampusse	R11

	43:ccc:300 46:ppp:372					
prob beindruck jargon	35:h:35 36:r:74 37:u:108 38:z:138 40:ll:198 42:vv:252 pc 44:ddd:315		56:o:60 57:p:57 60:rr:157 onreregverdigh			77:r:43 leerkwal=punte 77:j:21 tipes leer?
beskou stud as lui en oneerlik	39:ee:170 "geleerde bobbejaan" 45:ooo:363 "kultuur"	49:o:63 49:p:66 49:q:68 50:s:84 pateties	57:x:79 kultuur herhalers doen die vrotste, want hul dink hul ken dit nou 69:rr:119 stud woon nie klasse by nie 69:ss:121	66:h:23 stud te veel TV, 66:i:24 net viuele stim	71:k:34 stud inspraak 71:l:35 stgids moet kommunik 73:ee:107 o/handel met bosluis	inter-pers kontak onnb, nie eintlik kommun aan d gang nie 77:l:25 78:y:78 al my gr swak 79:gg:94 hd jr gaan da niks aan nie