AUXIN (27 August 2019)

ENGLISH

AUXIN hosted by	The Centre for Teaching and Learning (CTL)
Title of Presentation	Insights from Orthogonality for Mathematical Proficiency
Summary of Invitation	The CTL hereby invites you to a lunch-hour session as part of the AUXIN Project. The AUXIN Project aims to create growth opportunities for SU lecturers.
Title and Name of Presenter(s)	Prof Ingrid Rewitzky
Short Biography of presenter(s)	At Stellenbosch University Ingrid Rewitzky has been involved in educational leadership within and across relatively complex environments through her roles as Professor of Mathematics (since June 2009), Executive Head of the Department of Mathematical Sciences (since 1 January 2010), and Vice-Dean (Learning and Teaching) of the Faculty of Science (since 1 October 2011). She currently also holds a SU Teaching Fellowship.
Blurb (Including Conclusions and Implications for Teaching and Learning at SU)	As many as ninety percent of the prospective students for tertiary education institutions in South Africa have no more than an intermediate level of mathematical proficiency. This leads to a discontinuity between the outcomes of schooling and the demands of higher education, known as the articulation gap. It is understood to involve depth of understanding, depth of learning, and level of competency with the acquired skills. This has been identified as a key obstacle to student success. On the positive side, a gap can be closed from either side so there are possibilities for positive action. In this Auxin session, the Epistemic Plane of the Specialization dimension of Legitimation Code Theory is proposed as a conceptual framework for illuminating different insights of mathematical proficiency in terms of *know-that, know-why, know-how, know-where, know-for.* This framework is shown to provide a systematic approach for guiding individualized curriculum integrated differentiated support to empower students to fill their gaps in mathematical proficiency. Success of such support could then be evaluated in terms of how students navigate between the different insights and in terms of improvement in student success in STEM programmes.
Articles (Bibliographic information of 2 easy-read articles on the topic)	Mathematics Students' Conceptions of Mathematics. A. Reid, P. Petocz, G. Smith, L. Wood, E Dortins. New Zealand Journal of Mathematics 32. p 163-172. (2003) University Students' Views of the Role of Mathematics in their Future. L.N. Wood, G Mather, P Petocz, A Reid, J. Engelbrecht, A. Harding, K. Houston, G.H. Smith, G. Perrett. International Journal of Science and Mathematics Education 10(1):99-119 (2012)

Key Words	Mathematics, Legitimation Code Theory
Date of Presentation	27 August 2019 12:45 – 13:45
Venue	E3008, Education Faculty, GG Cillié Gebou Building, Ryneveld Street, Stellenbosch
Please RSVP by completing the Google form: https://docs.google.com/forms/d/e/1FAIpQLSfqtAwQGhYM9nKv0JeZVpkyhGew7LqVX79QLYMo-aZlHE7C9w/viewform?usp=sf_link	
Enquiries	Ms Nothemba Nqayi nothemban@sun.ac.za 021 808 3717
Cancellations	If, for some or other reason, you are no longer able to attend the AUXIN, we request that you please CANCEL your registration at least 24 hours before the time, by contacting Ms Nqayi (contact details above). There are certain financial costs incurred by the CTL for each AUXIN, and the request is to minimise financial implications.
More Information	A podcast will be available on the CTL website after the session: www.sun.ac.za/ctl

AFRIKAANS

AUXIN aangebied deur	Die Sentrum vir Onderrig en Leer (SOL)
Titel van Aanbieding	Insigte uit Ortogonaliteit vir Wiskundige Vaardigheid
Opsomming van Uitnodiging	Hiermee nooi SOL u graag na ’n etensuur sessie as deel van die Auxin-projek. Die Auxin-projek se doel is om groeigeleenthede vir US-dosente te skep.
Titel en Naam van Aanbieder(s)	Prof Ingrid Rewitzky
Kort Biografie van aanbieder(s)	Vanuit haar rolle aan die Stellenbosch Universiteit (SU), is Prof Ingrid Rewitzky betrokke by onderrigleierskap binne en tussen relatief komplekse omgewings, as Wiskundeprofessor (sedert Junie 2009), as Uitvoerende Hooef van die Departement van Wiskundige Wetenskappe (sedert 1 Januarie 2010), en as Vise-Dekaan van Leer en Onderrig van die Fakulteit Natuurwetenskappe (sedert 1 Oktober 2011). Sy is tans ook ‘n SU Onderrigvennoot.
Opsomming (“Blurb”) (met inbegrepe van Gevolgtrekkings en Implikasies vir Onderrig en Leer @US)	Soveel as negentig present van Suid-Afrika se voornemende tersiêre studente het wiskundige vaardighede op slegs intermediêre vlak. Dit lei tot ‘n gebrek aan kontinuïteit tussen die skooluitkomste en die eise van hoër onderrig, bekend as die artikulasiegaping. Die gaping behels die diepte van insig en van leer, en die vlak van vaardigheid. Hierdie gaping is identifiseer as ‘n belangrike hindernis in die pad van studente se sukses. Die goeie nuus is dat ‘n gaping van enige van die twee kante af oorbrug kan word, so daar is moontlikhede vir positiewe optrede.

	In hierdie Auxin sessie gebruik Prof Rewitzky konsepte uit die legitimasiekodeteorie (Legitimation Code Theory) se epistemiese vlak van die spesialisasiedimensie (Epistemic Plane of the Specialization dimension) as 'n konsepraamwerk om verskeie insigte toe te lig oor wiskundige vaardigheid in terme van *weet-dat, weet-hoekom, weet-hoe, weet-waar, weet-vir.* Dit toon aan dat hierdie raamwerk 'n sistematiese benadering bied om studente te ondersteun met geïndividualiseerde en kurrikulum-geïntegreerde begeleiding, sodat studente bemagtig word om die gapings in hulle wiskundevaardighede te oorbrug. Die sukses van sulke ondersteuning kan evalueer word in terme van die mate waarin studente verskillende insigte kan navigeer en in terme van beter studentesukses in wetenskaplike vakke.
Artikels (Bibliografiese gegewens van 2 maklik-verstaanbare artikels oor die onderwerp)	Mathematics Students' Conceptions of Mathematics. A. Reid, P. Petocz, G. Smith, L. Wood, E Dortins. New Zealand Journal of Mathematics 32. p 163-172. (2003) University Students' Views of the Role of Mathematics in their Future. L.N. Wood, G Mather, P Petocz, A Reid, J. Engelbrecht, A. Harding, K. Houston, G.H. Smith, G. Perrett. International Journal of Science and Mathematics Education 10(1):99-119 (2012)
Sleutelwoorde	Wiskunde onderrig, Legitimasiekodeteorie
Datum van Aanbieding	27 August 2019 12:45 – 13:45
Plek	E3008 in die Opvoedkunde Fakulteit, GG Cillié Gebou, Ryneveld Straat, Stellenbosch
RSVP asseblief deur die volgende *Google Form* te voltooi: https://docs.google.com/forms/d/e/1FAIpQLSfqtAwQGhYM9nKv0JeZVpkyhGew7LqVX79QLYMo-aZlHE7C9w/viewform?usp=sf_link	
Navrae	Me Nothemba Nqayi nothemban@sun.ac.za 021 808 3717
Kansellasies	Indien u, om watter rede ookal, nie meer die AUXIN kan bywoon nie, versoek ons dat u asseblief u registrasie ten inste 24 uur voor die tyd kanselleer, deur Me Nqayi te kontak (kontakbesonderhede hierbo). Daar is sekere kostes verbonde aan elke AUXIN vir SOL, en die versoek is om finansiële implikasies te minimaal te hou.
Meer Inligting	Na afloop van die sessie sal die potgooi beskikbaar wees op SOL se webtuiste: www.sun.ac.za/ctl