

Problem-based Adventure Learning: Addressing the Conundrum of Inaccessible Under-prepared Students

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Points of departure

- What do we define as under-preparedness?
- Who is the under-prepared student?
- What causes under-preparedness?
- What is the SA situation?
- How do we address this problem?

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Under-prepared students

- **Multidimensional** concept (Robinson 1996)
- **Academic:**
 - various levels of aptitude
 - different social, economic and academic backgrounds
 - lacking foundation skills
 - academic literacy
 - mathematical literacy
 - academic skills

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Cultural and emotional under-preparedness

- **Cultural:**
 - cultural background different to that of the higher education institution
 - Eurocentric vs Afrocentric
 - Learning culture
 - Language of instruction (mother tongue)
- **Emotional:**
 - lack of self-efficacy and self-regulation
 - Self-efficacy: Beliefs about their performance capabilities
 - Self-regulation: Extent to which students take responsibility for own success.

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Contributors to under-preparedness

- Poor academic performance
- Inadequate preparation
- Low expectations
- Secondary school system
 - Inequalities
 - Educators lack training, motivation and commitment

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Some SA School Statistics

- Of 11 Southern African countries:
 - Grade 6 reading comprehension & mathematics 3rd worst on both tests
- Of 38 African countries SA Grade 8:
 - score 275 for mathematics (mean score 487)
 - 243 for science (mean score 488)
- Of 12 African countries:
 - Grade 4 numeracy score 30% below 2nd lowest country,
 - 9th out of 12 literacy.
- 27% of Grade 12's passed Mathematics 2002
 - 4.6% HG
 - 23% SG
- Mathematics teachers (van den Berg et al.)

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The South African situation

- 8% of 25,000 public schools functional
- 1996 – 2007:
 - 1,5 million Grade 1
 - 40% reached Grade 12
 - 26,6% passed Grade 12
 - 19,2% (77,000) functionally literate (Grade 8)

(Jackson, 2008: online)



Estimated rate of first year under-preparedness 69%

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Early identification and Intervention

- First-year retention is a “key indicator of future student success”.
- **Retention = Early identification + (Early + Intensive + Continuous) Intervention** (Seidman retention formula)
- **Intervention**
 - to be implemented concurrently with academic programme offerings = **potential problem**
- **“Early identification”** (HOW early is early?)
 - both identification & interventions : **while students still at high school** (Seidman 2004)

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Predictive modelling

- When application was received
- Academic performance marker
- Financial information
- Other demographic or institution-specific information
 - residential/ commuter status
 - family structure
 - lack of educational achievement (Ness, 2004: online)

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Collaborative problem-based adventure learning

- Range of participants
- Forming learning partnerships
- in authentic team-based contexts
- through curriculum grounded in problem-solving

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Collaborative problem-based adventure learning in South Africa

- **Partnerships:**
 - undergraduate and postgraduate students
 - Well-resourced and under-resourced schools
- **Teacher training:**
 - authentic learning environment for aspirant teachers,
 - enrich educational practices in the school environment
- **Teaching teams:**
 - specific needs of under-prepared students addressed

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Collaborative problem-based adventure learning in South Africa (continue)

- **Unlikely to realize on large scale:**
 - level of individual higher education institutions and their feeder schools
- **Availability of dedicated resources:**
 - community service projects represent a concurrent indirect investment

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Conclusion

- Not a comprehensive response
- Pro-actively addresses contexts that give rise to under-preparedness.

