Table 3. Themes, categories and sub categories of the integrated review

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| **THEMES** | **CATEGORIES** | **SUB CATEGORIES** |
| 1. Positive outcomes in online learning context
 | 1.1 Increased student satisfaction and motivation* Matlakala et al. (2013)
* Holland et al. (2013)
* Akimanimpaye & Fakude (2015)
* Du et al. (2013)
* McCutcheon et al. (2015)
* Andrew et al. (2015)
* Gilmore & Lyons (2012)
* Lounsbery & Pittenger (2011)
* Davies et al (2015)
* Pryjmachuk et al. (2015)
* Salyers et al. (2014)
* McKee et al. (2010)

1.2 Enhance problem solving skills* Matlakala et al. (2013)
* Hsu & Hsieh (2014)

1.3 Increased flexibility for learning* Davies et al (2015)
* Akimanimpaye & Fakude (2015)
* Du et al. (2013)
* Andrew et al. (2015)
* Gilmore & Lyons (2012)
* Holland et al. (2013)
* Bigony (2010)
* Salyers et al. (2014)
* Pryjmachuk et al. (2015)
* McKee et al. (2010)

1.4 Conducive learning environment* Du et al. (2013)
* Andrew et al. (2015)
* Akimanimpaye & Fakude (2015)

1.5 Collaborative learning* Hsu & Hsieh (2014)
* Matlakala et al. (2013)
* Akimanimpaye &Fakude (2015)
* Salyers et al. (2014)

1.6 Enhances student participation* Vonderwell & Boboc (2013)
* Hsu & Hsieh (2014)
* Matlakala et al. (2013)
* Akimanimpaye & Fakude (2015)
* Du et al. (2013)
* Andrew et al. (2015)
* Mostert & Snowball (2013)
* Bigony (2010)

1.7 Integrates theory-practice gap* McCutheon et al. (2015)
* Agrawal et al.(2016)
* Holland et al. (2013)

1.8 Enhances computer literacy skills* Holland et al. (2013)
* Davies et al (2015)
* Akimanimpaye & Fakude (2015)
* Bigony (2010)

1.9 Increase access* Bigony (2010)
* Salyers et al. (2014)
 | * Enhances retention of students
* Lifelong learning
* Critical thinking skills
* Knowledge acquisition and retention
* Student-centred learning
* Self-directed learning
* Accommodate work and family responsibilities
* Non-threatening
* User friendly
* Peer support
* Information sharing
* Active involvement
* Take responsibility for learning
* Increase decision making and control over learning aspects
* Student connectivity
* Increases independence/self-efficacy of students
* Unlimited opportunities to observe the demonstration of practical skill
* Integrates knowledge and skills
* Distant/rural areas
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| 1. Challenges in the online learning context
 | 2.1 Unstable internet connectivity* Esewe, & Adejumo (2014)
* Maboe & de Villiers (2011)
* Davies et al (2015)
* Akimanimpaye & Fakude (2015)
* Matlakala et al. (2013)
* McKee et al. (2010)

2.2 Inadequate internet facilities* Esewe, & Adejumo (2014)
* Maboe & de Villiers (2011)
* Akimanimpaye & Fakude (2015)
* McKee et al. (2010)

2.3 Limited computer literacy/competencies* Esewe, & Adejumo (2014)
* Maboe & de Villiers (2011)
* Davies et al (2015)
* McKee et al. (2010)

2.4 Limited support from facilitator/lecturer* Esewe, & Adejumo (2014)
* Maboe & de Villiers (2011)
* Davies et al (2015)
* McKee et al. (2010)

2.5 Financial implications* Bigony (2010)
 | * Technical problems
* Inconsistent power supply
* Unavailability
* Limited access
* Lack of infrastructure
* Limited computer training
* Availability of ICT technicians or experts
* Computer costs
* Training costs
* Internet data costs
* Cost of programme development
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