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 |
| 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 |