

# TECHNOLOGY-SUPPORTED COOPERATIVE LEARNING PROFESSIONAL DEVELOPMENT (TSCL PD): HOPE FOR A NEW TEACHER PROFESSIONAL DEVELOPMENT STRATEGY

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*This conceptual paper aims to present a novel approach to teacher professional development that involves teachers in the acquisition of information and skills to enable them to deliver instruction that meets the needs of the 21st century. The literature on a technology-supported, cooperative learning approach for the professional development of teachers suggests that it is an effective way to enhance teacher knowledge, attitudes, and skills in cooperative learning. For teachers, the key benefits of TSCL PD are information sharing, taking part in participatory decision-making, and accepting and supporting one another. These elements could most likely be replicated in any school or through cooperation between teachers and other stakeholders. Future research should continue to explore the effectiveness of TSCL PD in different settings and with different populations of teachers.*

**KEYWORDS:** Cooperative learning, Self-directed learning, Teacher professional development, Technology-supported cooperative learning

## INTRODUCTION AND RATIONALE

Much of the educational research (Desimone, 2020; Guskey & Yoon, 2009) has been centred on teacher professional development (TPD) strategies to improve teachers' professional growth. These TPD strategies, however, rarely allow teachers to connect content to their settings to increase understanding, and there are no opportunities for teachers to test new skills or practices actively (Darling-Hammond, 2017). A recent study by Ajani (2020) for instance, provides evidence that TPD in South Africa is such a significant issue that there are always opportunities for further teacher training and retraining in the hope of improving learners' academic performance and achievements. Studies demonstrate that traditional approaches to TPD, such as one-time workshops, seminars, and conferences, have little impact on teachers' ongoing PD and do not result in significant improvements in their teaching approaches. It is also disappointing that most facilitators who deliver these traditional TPD interventions, build them around their own opinions of teachers' needs (Sebotsa et al., 2018). The facilitators' approaches do not always address the practical needs of teachers, and, the facilitators do not consider the different levels of motivation, enthusiasm, knowledge, and expertise among teachers.

Some studies (Hendricks, 2004; Iheanachor, 2007; Murtaza, 2010) show that when PD strategies are held outside the school premises, there is very little impact on teachers' professional growth. Ajani (2020) also supports this statement, by arguing that few PD strategies that are planned by the Department of Education (DoE) and teacher unions are effective, as they target a limited number of teachers, with prepared activities that do not relate to teachers' needs. Most of these teacher PD strategies are designed to meet the demands of the policy while neglecting the needs of the teachers (Ajani, 2020).

The fact that most TPD strategies do not focus on teachers' needs and do not enable teachers to take charge of their own professional growth (i.e., become more self-directed) might be a cause of concern. It is because of this setback that teachers remain poorly prepared to teach, which also results in learners' poor academic performance (Jita & Mokhele, 2014). The Centre for Development and Enterprise report (2011) clearly articulates the gap that this study fills, namely, that the one-time TPD strategy is ineffective, and that more longitudinal and systemic approaches to TPD are required. There is therefore a need for teachers to enhance and update their knowledge regularly.

One possible way for teachers to deepen their knowledge and become more self-directed is to be engaged in PD that is continuous, effective, and allows for working together (Murtaza, 2010). According to Sekano et al. (2020), a successful PD strategy in the 21st century should provide the following key processes: teachers learn together, reflect on the knowledge they have learned, use technology, and receive assistance from the facilitators. Additionally, the common requirement amongst many studies is that technology should form part of teachers' PD (Ertmer & Ottenbreit-Leftwich, 2021). The use of technology in PD can offer more opportunities than traditional PD strategies. Technology forms an important component that can inspire teachers, assist them with the challenges of the teaching profession and promote their lifelong PD (Kriek & Grayson, 2009). Such a PD strategy can create an opportunity for teachers to share ideas and material, regardless of geographic proximity (Sekano et al., 2020). It is within this context that this conceptual paper presents a framework for understanding technology-supported cooperative learning professional development (TSCL PD) and its potential benefits for promoting effective teaching practices. TSCL PD refers to a TPD strategy that incorporates digital tools and resources, combined with the use of CL strategies to enhance teachers' knowledge and skills to be more effective, confident, and responsive in their classrooms (Dahriet al., 2019). Through the integration of digital tools and online platforms, teachers can work together in virtual spaces, sharing resources, ideas, and feedback (Sekano et al., 2020). This strategy allows teachers to overcome physical limitations and collaborate with colleagues from different schools, districts, or even countries. The use of technology facilitates synchronous or asynchronous communication, enabling teach-

ers to exchange knowledge, discuss best practices, and collectively solve problems (Johnson & Johnson, 2014).

### **CONCEPTUAL FRAMEWORK**

Our conceptual framework for understanding TSCL PD consists of four key components: TPD in the South African context, technology integration, cooperative learning, and the use of technology to support cooperative learning. These components are interrelated and mutually reinforcing, and they contribute to the development of effective teachers' professional growth.

### **TRADITIONAL TEACHER PROFESSIONAL DEVELOPMENT**

The literature on traditional TPD highlights the importance of PD in improving teaching and learning outcomes (Palos & Gunaru, 2017; Verster et al., 2018). However, traditional approaches to PD have been criticised for their lack of effectiveness and sustainability. Traditional TPD typically involves workshops, seminars, and conferences where teachers attend sessions that are facilitated by experts in a particular subject or area (de Clercq & Shalem, 2014). These sessions are typically conducted in person, either on-site or off-site, and involve lectures, discussions, and hands-on activities. The focus of traditional TPD is to provide teachers with information and skills that they can apply directly in their classrooms (Palos & Gunaru, 2017). The training may be delivered in a variety of formats, including lectures, small group discussions, and hands-on activities (Ajani, 2020). This approach to PD has been around for many years and is still widely used today.

In South Africa, TPD has been recognised as a crucial component of efforts to improve the quality of education and support student achievement. The government has implemented several initiatives to provide training and support for teachers, particularly in disadvantaged and rural areas where access to PD opportunities can be limited (de Clercq & Phiri, 2013). One of the key programmes is the South African Council for Educators (SACE) PD framework, which requires all registered teachers to participate in ongoing PD to maintain their accreditation (DoE, 2006). This framework provides guidelines and standards for PD activities and promotes a culture of lifelong learning among educators (DoE, 2006). Other government initiatives include the Funza Lushaka Bursary Programme (Department of Basic Education (DBE, 2012), which provides financial support for aspiring teachers to pursue their studies, and the National Professional Teacher's Organisation of South Africa (NAP-TOSA), which provides PD opportunities and support for teachers (Chisholm, 2005; Desimone, 2009).

There are also many non-governmental organisations (NGOs) and private providers that offer PD strategies and resources for teachers in South Africa. Some of these initiatives focus on specific subject areas or teaching methods, while others are

designed to support the overall professional growth of educators (Desimone, 2009). Despite these efforts, challenges remain in ensuring that all teachers have access to high-quality PD opportunities. These challenges include limited resources, a lack of coordination among providers, and difficulties in reaching teachers in remote and under-resourced areas (Murtaza, 2010). While traditional TPD has been criticised for improving teacher practice, there has been a growing recognition that more personalised, job-embedded, and ongoing forms of professional learning may be more effective in supporting teacher growth and student learning outcomes (Darling-Hammond, 2017).

## THE USE OF TECHNOLOGY TO SUPPORT COOPERATIVE LEARNING

Cooperative learning (CL) is commonly recognised as a pedagogical practice that promotes socialisation (Johnson & Johnson, 2013). The opinion of Johnson and Johnson (2013) is that when people work together, they tend to encourage and motivate each other more frequently than when working alone. Mentz et al. (2008) expressed a similar view positing that CL positively influences the social relationship within groups, by allowing individuals to communicate effectively, build trust among themselves, make better decisions, and resolve conflicts. Mutual respect between group members, conflict resolution, decision-making skills, and trust building are actions proposed by Johnson and Johnson (2009) to be undertaken for social skills to be stimulated. Given that CL can promote socialisation, the incorporation of *technology has now also changed* how people interact with each other.

The fast-changing pace of technology has opened new possibilities for enhancing social support through photos, videos, text, and music, irrespective of time and location (Johnson & Johnson, 2014). Different applications, for example, Facebook, instant messaging, Snapchat, Skype, and FaceTime have all created new ways of communication (Johnson & Johnson, 2014). These technological applications allow the exchange of information between individuals, making it possible for every CL member to communicate from different locations and at different times (Johnson & Johnson, 2014). It is clear, therefore, that the use of technology in a CL environment makes it possible for members to work on the same task simultaneously and actively collaborate in this manner. Given this evidence, the combination of technology and CL strategies has the potential to improve learning by providing unlimited opportunities for teachers' PD.

Mentz and Goosen (2013) are of the opinion that CL (in a technology-rich environment) increases individuals' active participation in activities while providing more opportunities for instant interaction. As an equally significant aspect, Hsu et al. (2018) rightly point out that the use of technology to support CL could improve individuals' (in this case, teachers') goals, such as inter-group relations, active participation,

higher levels of success, and increased self-esteem. There is no doubt that TSCL can be adopted as a successful PD strategy in which teachers have more control over their learning. It is clear, therefore, that TSCL opens new opportunities for better learning and teaching environments by allowing individuals to exchange information and discuss, encourage, and facilitate each other's efforts (Sekano et al., 2020).

### **TECHNOLOGY-SUPPORTED COOPERATIVE LEARNING PROFESSIONAL DEVELOPMENT**

TSCL PD is a more modern approach that makes use of digital technology to facilitate collaborative learning and PD among teachers (Johnson & Johnson, 1998, 2014). This approach emphasises the use of technology to support collaborative learning, which can take place anytime, anywhere (Johnson & Johnson, 2014; Kao & Kuo, 2017). Teachers can use online platforms to share ideas, resources, and experiences. They can collaborate on projects, share feedback, and participate in group discussions (Sekano et al., 2020). This approach is more flexible, and it allows teachers to work at their own pace and in their own time (Johnson & Johnson, 2014; Kao & Kuo, 2017).

### **PROPOSAL FOR TECHNOLOGY-SUPPORTED COOPERATIVE LEARNING PROFESSIONAL DEVELOPMENT**

Our conceptual framework has important applications and implications for TPD practice. It suggests that teachers need to be involved in a new strategy of PD, which provides many opportunities for teachers to connect with others, and explore topics of interest, regardless of proximity (Sekano et al., 2020). Additionally, the use of technology tools in TSCL extends the reach and flexibility of collaborative learning opportunities (Johnson & Johnson, 2014). The principles of TSCL are therefore based on the concept of CL, which is characterised by interdependence, individual accountability, and equal participation (Johnson & Johnson, 2013).

One study by Hsu et al. (2018) examined the effects of a TSCL-based PD strategy on teachers' pedagogical practices and attitudes towards technology integration. The results showed that the TSCL PD strategy was effective in improving teachers' attitudes towards technology integration and in promoting the use of collaborative learning strategies in the classroom.

Another study conducted by Yavuz and Ozdemir (2017) explored the impact of a TSCL PD strategy on elementary school teachers' beliefs about the use of technology in CL. The intervention strategy included online discussions, virtual classroom observations, and video-recorded lessons. The study found that the intervention led to significant improvements in the teachers' beliefs about the use of technology in CL. Similarly, a study conducted by Goktas et al. (2009) investigated the impact of a TCL PD strategy on secondary school teachers' knowledge and skills in using CL in their

classrooms. The intervention strategy involved online discussions, group projects, and online modules. The results of the study showed that the programme significantly improved the teachers' knowledge and skills in using CL.

It can be seen that the findings from various studies suggest that TSCL PD is an effective approach to TPD. The studies (Hsu et al., 2018; Goktas et al., 2009; Yavuz & Ozdemir, 2017) consistently showed that TSCL PD interventions resulted in significant improvements in teacher knowledge, attitudes, and skills in cooperative learning. Specifically, TSCL PD was found to improve teachers' understanding of content, their ability to implement it in their classrooms, and their attitudes toward technology and CL.

Technology can therefore be the answer to many teachers' PD, by putting teachers in control of their learning (Ertmer & Ottenbreit-Leftwich, 2021). In addition, technology can be used to facilitate CL by creating an environment in which individuals choose the best and easiest method of learning, in the privacy of their own space and at their own pace (Mentz & Goosen, 2013). The amount of information available online, the availability of different application software, and the possibility of cooperation through technology can provide teachers with the opportunity to become experts in their fields and to meet the demands of educational challenges for the 21st century (Yavuz & Ozdemir, 2017). Aspects of this TSCL PD that teachers can most enjoy – exchanging information, engaging in democratic decision-making, accepting, and supporting each other – are factors that could most likely be reproduced in any school or through collaboration between teachers and other stakeholders (Mentz & Goosen, 2013). TSCL PD could therefore be a viable option to meet teachers' PD needs by creating new possibilities for introducing flexibility for individuals in terms of time, place, and pacing of independent study.

## CONCLUSION

This paper aimed to propose a novel approach to TPD. It highlighted that PD must become part of a teacher's daily life to address the challenges with which they are faced. The literature review informed the development of TSCL PD, as well as a framework for understanding TSCL PD. By identifying the key components of this approach and their interrelationships, we hope to guide future research and practice in this important area of study. Our framework can be applied in a range of contexts, and it provides a valuable tool for educators, policymakers, and researchers seeking to promote effective TPD and student learning outcomes.

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