

Chapter 63

A Virtual Inclusive Community of Practice as a Technological Intervention Strategy to Enhance Student Inclusive Teaching and Learning

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ABSTRACT

Creating virtual inclusive teaching and learning was given momentum by the advent of the COVID-19 pandemic. Since the COVID-19 pandemic, the support of students to access pedagogical content knowledge on a distance curriculum delivery mode has become the priority of most institutions of higher learning. This critical collaborative action research study reports on the experiences of 10 higher education instructors and 10 doctoral and 10 master's students in developing an inclusive virtual supportive community of practice for enhancing the teaching and learning process during the delivery of education in a distance mode in one of the universities in Kazakhstan. A community of practice theory is used as a compass and lens for the study. This article proposes the formation of a virtual community of practice as a vehicle to limit the impact of ability and disability among students on a distance mode of education.

INTRODUCTION

Kazakhstan has adopted the philosophy of inclusive education. The adoption of inclusive education starts with article 14 (2) of the constitution of the Republic of Kazakhstan and Law on Education (2007) which guarantees non-discrimination with regard to education. The contribution ensures that education provision for all citizens of the country. Kazakhstan is also a signatory to the Salamanca Statement, a document which many countries committed themselves in making education inclusive. Following that was the State programs 2011-2019, 2016-2020 which aimed to have all schools 70% inclusive by 2020 and State Program 2020-2025 which aimed to have 100% of Schools inclusive by 2025.

Recognizing that inclusive education has become a global phenomenon at all levels of education including higher education, educational institutions with diverse students, staff and faculty, are obliged to provide equitable and equal educational services which cater to the educational needs of different groups

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in the way that ensures physical, material and epistemic access to all. They therefore, have to endeavour to create a safe, all-inclusive environment that ensures the protection of the rights of all. As a result of the inclusion of students with disabilities and special needs in secondary education, more opportunities have been created for them to enter higher education institutions.

Higher education institutions are required to provide opportunities through inclusion of students with special educational needs and disabilities in their lectures. The advent of the Covid 19 pandemic made the concept of inclusion even more complex as students have to study virtually and still be supported to make a success out of their learning. As a results more ideas about alternative support for students were put into place. This study though explored the formation of a virtual community of practice as a vehicle to enable student ability and limit the impact of disability of students in learning on a distance mode of education. This study therefore aimed at the following objectives:

- Through the literature conceptualize the notion of community of practice, by discussing its nature as a virtual platform and explain in relation with inclusion;
- Through empirical research the study explores the benefits and challenges thereof.

Therefore, this study occurred in the context of the advent of the covid 19 pandemic which gave momentum to the creation of inclusive virtual inclusive teaching and learning environments. Since, the Covid 19 pandemic the support of students to access pedagogical content knowledge on a distance curriculum delivery mode became the priority of most institutions of higher learning in Kazakhstan.

This critical collaborative action research study reports on the experiences of ten (10) higher education instructors and ten (10) doctoral and ten (10) master students in developing an inclusive virtual supportive community of practice for enhancing the teaching and learning process during the delivery of education in a distance mode in one of the universities in Kazakhstan. A community of practice theory is used as a compass and lens for the study. Data was collected through the four stages of collaborative action research in form of interviews, focus group interviews, discussions and diaries. Data were analyzed using thematic content analysis.

Among the findings collaboration through continuous interactive student monitoring and support through virtual technologies was important for inclusion of students in the teaching and learning process. An inclusive community of practice built supportive bridges between able and disabled students as well as between skilled instructors and less skilled instructors regarding the use of technology to aid teaching and learning.

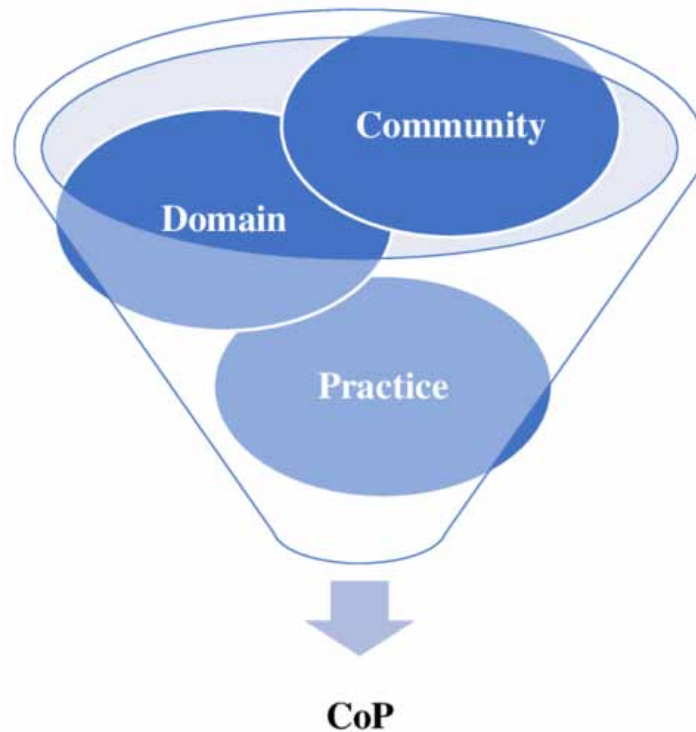
LITERATURE REVIEW

Conceptualizing of Community of Practice

The notion of community of practice (CoP) is understood as a concept whereby a group of people come together to share ideas and challenges in order to improve their practice. Wenger (1998) identify several characteristics of such a community. Firstly, there is an element of collective learning, which is at the center of a CoP. Secondly; there is a process of reflection about what needs to change or to be learned. There is always a triad involved (i.e.)

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Figure 1. Configuration of CoP



The domain involves a shared membership with shared interest and unique identity. The community engage in activities and discussions. There is open communication and exchange of information and knowledge between members. There is an emphasis on the interactive nature of the community.

The CoP needs to develop shared repertoire of resources: experiences, stories and tools to address issues – thus developing shared practice. However, according to Cox (2005) the use of the concept of CoP is diverse. Cox avers that sometimes it is used as a lens to probe socially constructed meaning while on the other hand it can be used to refer to a virtual community or an informal group with a purpose of sharing information or learning.

Cox (2005) makes a distinction between various conceptualization of CoP (i.e.)

- *Situated learning*: legitimate peripheral participation characterized by continuous active engaged, situated and forming process (Lave and Wenger, 1991).
- *Organizational learning and community of practice* towards a unified view of working, learning and innovation (Brown and Duguid, 1991) characterized by organizational setting to improve new way of organizational work.
- *Community of practice*: learning, meaning and identity (Wenger, 1998) characterized by social identity of members in the context of individual membership of various communities.

Cox (2005) cautions that the different conceptualizations assume different understandings of concepts such as community, learning, power, change, formality and diversity.

The Nature of Community of Practice

The CoP movement in education dates back to the 1990s (Jokovljevic, Buckley & Bushney, 2013). While Jokovljevic, Buckley & Bushney (2013) postulate that CoPs are found in various perspectives and models, there is however some main features of CoP. According to Goodhue and Seriamlu (2021) CoP consists of three level structure (i.e.) the convenor at the center, then core members then peripheral members. However, the community of practice CoP can evolve and become bigger and develop other layers on. For instance, from the core group, one would find layer of active members, other occasional members, the peripheral members and transactional. The roles of different layers are:

- Core: main group;
- Active: regular and engaged;
- Occasional: only participate for a special purpose;
- Peripheral: less contribution and less engaged;
- Transactional: outsiders and critical friends.

The relationship in the CoP is controlled by a set of relationships, personal interactions and connections among the members. Goodhue & Seriamlus (2021) indicate that while team-work might look like CoP, it is different in that CoP it is self-sustained and does not dissolve after the task was completed. Baker & Beams (2016) postulate that the success of the community of practice hinges on the bottom-up (grassroots) decision making process where participants are highly engaged. Resonating with this argument are the following attributes identified by Jokovljevic, Buckley & Bushney (2013:1109) as critical for the success of CoP:

- Participants should have the greatest need for collaborative activities within a CoP context.
- Participants must be aware of the importance of the proper environment to enable effective learning to take place, and to ensure the right time of study and smooth administration.
- Good CoP leaders are knowledgeable, credible and skilful at enabling learning and can communicate effectively with their CoP members.
- It is necessary to review the success of a CoP intervention to improve the quality of activities and learning for future CoP activities.

On the other hand, Wenger, Mc Dermott & Snyder (2002) highlight seven principles of CoP i.e.

- Design for evolution: meaning CoPs evolve rather than being created, they are formed out of personal interest and networks of participants;
- CoPs are dialogical: in a sense that their leadership is informed by both insider and outsider perspectives;
- Participation is at different levels: because each participant chooses to partake in CoP to achieve different aims i.e skills development or new knowledge;
- Develop both public and provide spaces: that is public platforms such as websites are always balanced with private one on one engagements;
- Focus on value: members are held together by a value that CoP develops over time;

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- Combine familiarity and excitement: CoP members gradually get used to its operations but also could be excited by new ideas;
- Creating a rhythm for community: when a community develops some ways of working and doing things.

However, in creating a conducive environment for CoP, Jokovljevic, Buckley & Bushney (2013) emphasize the need for a safe and secure environment that can ensure the thriving of the creativity and innovation on part of its membership.

Online/Virtual Community of Practice

Kirschner & Lai (2007) postulate that CoP may be formed in face-to-face or virtual (Virtual Community of Practice (VCoP)). Due to the technological explosion and globalization in education more CoPs are formed virtually. VCoP is viewed as a process rather than a physical meeting. It is situated learning (Lave & Wenger, 1991). According to Kirschner and Lai (2007), the basic elements of online VCoP in education include among others: online communication process, social networking and community sustainability. A VCoP becomes a platform for reflective learning and engagement. They postulate that when used in tandem with participatory action research, it is a dialogical process involving sharing, comprehending, analyzing, synthesizing and transforming. Online VCoP may take various models i.e. E-portfolios and mentoring. VCoPs are known to create space for exchange of vocabulary and language (Laiche & Ghaouar, 2021). The advent of the Covid-19 pandemic has seen shifts into VCoPs to address contact between those who wish to learn together (Ghamrawi, 2022).

Shaw, Jazayeri, Kiegaldie and Morris (2022) describe the process of developing a VCoP as including:

- Determining the purpose of VCoP
- Recruiting members
- Criteria for membership
- Leadership roles
- Choosing technology and infrastructure
- Determining the size of network
- and forms of interaction.

The VCoP is known to have some advantages, for example Baron and Cagiltay (2006) postulate that VCoP provides a platform for reflective knowledge management. In this study the VCoP was used to understand how through collaborative action research, could be used to enhance the equitable inclusion of students in the teaching and learning process but also contribute to inclusive teaching practices of instructors.

Ford et al (2015) mention several benefits of a VCoP. i.e that both passive and active members benefit from the virtual community. Users of the community platform may feel comfortable engaging through administrative support and facilitation. On the other hand, Sibbald (2022) aver that VCoP ensures a sense of belonging this is echoed by Gannon-Leary & Fontainha (2008) who contend that VCoP encourages connectedness of shared passion and a deepening of knowledge derived from ongoing interactions. However, while Gannon-Leary & Fontainha (2008) point to the benefior of VCoP, they also highlight

some of the barriers i.e. the complexity of content to be shared might pose issues of poor understanding and thus pose a serious challenge to other VCoP members. Also, communication could be difficult in instances where the knowledge base of some members is not known. The level of collegiality may be a barrier if people hail from different contexts. Unstable composition as a result of poor participation and lack of trust due to the fact that members might have not interacted face to face in the past. On the other hand, Correia & Paulos supported by Al-Ghamdi H. & Al-Ghamdi A (2015) postulate that VCoP may enhance innovation and creativity. MacLoughlin et al (2018) think VCoP may decrease both social and professional isolation.

Communities of Practice and Inclusion

The notion of inclusive education assumes that students are taught in a less restrictive education environment with support tailored to respond to their educational needs or educational barriers (Makoelle, 2014). The support of diverse students can take multiple forms, from curriculum design, teaching and learning strategies and adaptations. The importance of technology has become more prominent as strategies to support students are being explored. Technology has therefore become central in the quest to ensure educational support, equity and access. According to UNESCO (2020) Global Education Monitoring Report, technology presents an alternative and auxiliary platform for supporting education access, equity and inclusion. Pittaway (2021) regards universal design for learning (UDL) as a vehicle with which CoP may use to remove the barriers for learning. The nature of inclusive practice is such that principles such as collaboration, partnership and collective reflexivity are crucial for the success of inclusive teaching and learning. Mortier et al (2010) argue that the formation of communities of practice by stakeholders with a vested interest in the support of vulnerable students could be extremely helpful and beneficial. In their work, they discussed how CoP enhanced the support of students with disabilities.

This is echoed by Laluevein (2009) who posit that the school's stakeholders need to establish a "community of practice" as a social platform to increase participation and change the beliefs and assumptions that are potentially exclusive.

Ainscow (2005) emphasizes the need for the formation of a "community" to understand the need to work collectively on the "practice". Ainscow believes that a community with its focus on the student in the center can adopt practices that may benefit students. Thus, it is assumed that a community is student-centered in its approach to inclusion and support. According to Kapucu (2012) not only should schools form communities of practice but they may need to facilitate communities of practice in learning in classrooms. This can be done with activities that foster interaction and mutual support. Therefore, the formation of communities for learning becomes very crucial.

RESEARCH METHODOLOGY

Community of Practice and Collaborative Action Research

Several studies have used action research to facilitate a community of practice. For instance, Ampartzaki et al (2012) indicate that community of practice maybe used through action research to evaluate and re-evaluate knowledge and practice which may lead to new insights and thus contribute to emerging new

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practices. In this study, a VCoP was established to provide an alternative platform to support students with their learning virtually, in the virtual presence and physical absence of the instructor. Bruce and Easley (2000) postulate that educational action research is often associated with a community. Collaborative Action Research (CAR) emphasizes partnerships in action between those who wish to “collaborate” in the quest to improve practice. In this study, a VCoP was established in order to virtually collaborate in the process of teaching and learning.

Selection of Participants

Ten (10) higher education instructors and ten (10) doctoral and ten (10) master students in developing an inclusive virtual supportive community of practice for enhancing the teaching and learning process during the delivery of education in a distance mode in one of the universities. In essence the VCoP was established with 30 members inclusive of the researcher. The members were selected purposefully as they were all engaged in teaching a particular course. Among the 20 Doctoral and Master students there were 4 students with disability. i.e two students who are visually impaired and two students with learning difficulties.

Data Collection Process

First, Formation of “Community”

The formation of VCoP started with the choice of the online platform. In this case, “Moodle” platform was used. All instructors and students registered for a “course”. First, both instructors and students developed a shared understanding of purpose and aim of a VCoP. Among the shared purposes, the main aim was to ensure effective teaching and inclusive learning on a distant online mode. Second, the VCoP developed the roles among students and instructors. A list of responsibilities for both was established. In a brainstorming initial meeting, the roles were clarified. Third, the VCoP developed a plan of action in terms of instructor’s role (teaching) i.e. development of online material, uploading of online material for students and the monitoring of learning process, through daily and weekly student reflections. Fourthly, the VCoP implemented various strategies on “Moodle” to support learning. Instructors facilitated the process while students reflected on the effectiveness of support. During this process member of VCoP documented and recorded in chat and discussion platform what worked and what did not in second community action.

Second, Community Action

A discussion platform was then used to make suggestions about challenges that both students and instructors encountered in the teaching and learning process. Among suggestions for support was a development of a programmed instruction to tailor the learning to the student pace, style and need. While there was a general process to facilitate learning, individualization and differentiation was applied through individualized programmed instruction. The support for student who experienced challenges was a community responsibility rather than that of an individual instructor. The discussion platform also encouraged inter-student interaction and peer learning and support.

Third, Community Reflection

The process of VCoP reflection took place on the online chat and discussion. The VCoP restated their goals in order to assess the extent to which the goals were achieved. The reflections were aimed at determining the following:

- How did the creation of VCoP enable teaching process?
- How did this process enable student support?
- How did student with disabilities benefit from VCoP?
- What challenges (if any) did VCoP experience and how did VCoP create opportunities for learning?
- What have VCoP members learned from the process?

Data Analysis

Data was analysed at two levels. First, the analysis took place at the level of CAR with participants. This analysis was only aimed at determining whether the goals of VCoP were achieved and if there has been a noticeable change in terms of learning and support for students and effectiveness of teaching. The group reflective meetings (which took place via Zoom platform) were used as analysis platforms for the VCoP. Second, the process of data analysis was conducted by the researcher. All data collected during CAR i.e. minutes of discussions, chats, instructor comments, student reflection and general reflections of VCoP members. The analysis was conducted inductively and the following steps were followed in the analysis process:

- Arranging data in an analyzable format;
- Reading through data to identify categories;
- Synthesizing themes from data by identifying pattern and meaning.

Trustworthiness

In order to determine the trustworthiness of the research member check was applied. Data from different sources was triangulated and corroborated.

Ethical Considerations

In order to ensure ethical standards, the names of participants, the course and material harvested from the CAR process were anonymized. All participants signed written consent forms.

FINDINGS

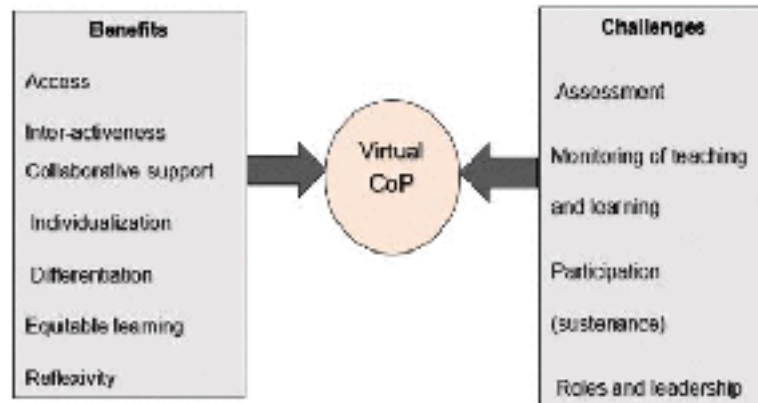
The findings of CAR as part of VCoP have emerged into the following key areas:

Benefits: Access; Inter-activeness; Collaborative support; Individualization and differentiation; Equitable learning; Reflexivity

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Challenges: Monitoring of teaching and learning; Assessment; Participation (sustenance) and Roles and leadership. Figure 2 below shows a summary of findings:

Figure 2. Summary of findings



Access

While there's popular belief that face-to-face teaching and learning makes access to teaching and learning material easily and more accessible, this study has demonstrated that online VCoP create a multimodal communication, which leads to multiple interpretation of material. The student is exposed to various meaning, which could be important for its understanding. For instance, when students reflected on their engagement with the material one of them indicated:

The significance of VCoP was that I got to know how fellow VCoP members understood the work or content under discussion. The chat allowed me to confirm my view against the views of other members, so in that way I have not only learners from instructors but gained from the perspectives of my fellow students as well.

The VCoP process also exposed the instructor to a variety of material interpretations and thus unmasking real meaning to all parties. Reflecting about the accessibility of teaching and learning material and processes in a VCoP, there was a general view that access was open-ended and that the VCoP created an accessible space for learning which student could access at own time and learn at own pace. For instance, one of the instructors stated:

The importance of VCoP is that you can log in and out, but also access the material at own time. One can also interact through chat and discussions at own time and convenience. The members do not have to be physically present for one to engage with them. One can always come back even after several hours to respond or attend to the given tasks.

This meant that the instructor may be able to monitor the extent to which the material is accessible to the students and the discussions within VCoP would flag whatever the challenges students were experiencing.

Inter-Activeness

The VCoP ensures that not only do student and instructors engage with teaching and learning material but the inter-activeness provides space for mutual learning, co-teaching and reflective interactions. VCoP creates a critical platform to probe and ask questions about the usefulness of actions within the pedagogic space. For instance, when students were reflecting about how helpful the VCoP was in terms of support one of them indicated:

The good thing I learned through VCoP and CAR is the level of support, encouragement and motivation one gets from the instructors and fellow students. The significance of interaction is that you get the alternative understandings and meaning of learning material and one can make helpful comparisons about knowledge or information.

The indication is that interactive-ness allows the emergence of the culture of support and collaboration. Such a culture is fundamentally governed by the acceptance of some values which are significant for inclusion i.e. empathy, tolerance and trust between members of VCoP. As one student puts it: “the VCoP is beneficial in making sure that from both the teaching and learning side, instructors and students can voice their opinion as equal members of the VCoP”

Collaborative Support

VCoP creates a culture of support but not from an individual perspective but from collective. All members of the VCoP charged with the collective responsibility to support the individual. In this study student with disability reflected about the process and believe that support from all dimensions is very helpful. For instance, one of the students with disability cited:

I am grateful that I can always depend on both the instructor and fellow students for learning support. While initially I thought it would be difficult for me as the student with visual impairment, I have come to realise that my fears about learning through technology were significantly challenged. I now can comfortably engage with members of the VCoP.

On the other hand, the instructors thought VCoP relieved them of the burden of doing more alone. VCoP ensures that all members take full responsibility of support. One of the instructors said” “the VCoP creates such a network of support from colleagues and even some ideas from students. I think VCoP compels us to work as a team. It creates channels for communication and the exchange of ideas to sharpen our teaching facilitation skills but also allows students to try new ways of learning”

The study has demonstrated that even digitally, the VCoP may be able to tailor the support of students to meet their individual educational needs. Reflecting on this one of the students with special need said: “I am happy that at least that the support organized for me as a student through VCoR could be planned according to my learning needs”.

Individualization and Differentiation

In creating VCoP students and instructors do not act as individuals but a collective. However, tailoring some actions, tasks and activities according to programmed instruction ensured that out of general

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teaching and learning process some measure of individuality and differentiation is maintained. That is the process take into account the individual needs of students. VCoP ensures that one size does not feel fit all. However, while working individually, the students were able to engage with fellow group mates and get their perspectives on the learning content. Reflecting on this process one student averred “while I could learn at my pace due to the individual education plan (IEP) I also enjoyed the peer involvement in the process of learning” On the other hand, the instructor mentioned that it was good that they can take collective decisions about how students could be supported in the teaching and learning process. On the other hand, students felt the individual programmed instruction aimed at responding to the individual needs of students was very helpful. One of the students with disabilities has this to say: “ I think while we can all work on the same content, it is just helpful that the process within VCoP allowed us to learn at our own style and at our own pace. One can achieve the expected learning outcomes because one is not in such a pressure that one has to compete with fellow students”

Equitable Learning

While VCoP assumes that all contribute to the effectiveness of teaching and learning, the study has shown that VCoP can account for equity issues related to students. In VCoP the individual and inequitable practices are dealt with by VCoP members as they reflect about principles such as support, access and inclusion. As a result, a thorough analysis of individual teaching and learning is needed to have a collective understanding of the process of teaching and learning. This study has shown that not only was VCoP effective in addressing the knowledge gaps of students but the teaching and learning process virtually took into account the diversity of backgrounds of both the instructors and students. The application of collectivism and individualism were aimed at addressing the equity issues that could related to both knowledge gaps and barriers creating inequitable access to teaching and learning. For instance, some of the instructors hailed the VCoP as good in that the equity issues of students can be openly identified and addressed. Again, there was an understanding that the student’s views about own learning could be heard. For instance, reflecting about how the VCoP-collaborative action research was addressing the gap in knowledge one of the students said: “at least I could share with the VCoP members my knowledge and learning shortcomings and collectively they would generate such a lot of helpful tips and hints about how I should go about it”

Reflexivity

While in face-to-face teaching and learning mode reflexivity could be individual, VCoP seems to ensure that the process of reflection is a collective exercise. It ensures that reflection provides a diversity of perspectives both from the instructor and student side. It actually develops a culture of voicing multiple perspective, which are critical for deeper understanding of teaching and learning dynamics. In the reflective stage of the CAR, it was clear from the deliberations that both instructors and students value talking about the process of teaching and learning. For instance, in one of the reflective Zoom meetings, one of the students indicated: “talking to both instructors and fellow students clarify issues. You can always get the right meaning and interpretations and your views get corrected.”

The reflective process on teaching and learning seems to have given feedback about practice to both instructors and students. For instance, reflecting on the process, instructors felt that they have learners more about their teaching practices and the incorporation of technology in the process. One instructor

wrote on discussion chat: “VCoP provides us as instructors with the opportunity to do a meta-teaching i.e. learning about own teaching. I have grown as an instructor as I have learned one or two things about technological aid and support for student teaching and learning.”

Monitoring of Teaching and Learning

While in a face-to-face teaching and learning context one instructor is responsible for monitoring the process, in VCoP the collective is responsible and various voices are involved in the process of monitoring. The instructors and student both get critical feedback, which is diverse and instant. The challenge in this study was when members of VCoP may not agree about a particular aspect of teaching and learning as many voices could find it difficult to reach consensus. The study has shown that the advantage of collective monitoring is that bias can be managed. However, the disadvantage was that the process of reaching agreement from the VCoP members was complex and took longer. In reflecting about the monitoring of the process one of the instructors stated: “the problems with monitoring of teaching and learning are that we have different understandings or perhaps different conceptions about what constitutes an effective, inclusive and supportive teaching and learning.”

While the students appreciated the help from fellow students and instructors, there was a problem of certainty. For instance, one student alluded to the fact that sometimes many answers are provided to one question thus making students doubt their knowledge validity. One of the students lamented: “sometimes I got confused about knowledge as it was so diverse and did not know which is which.”

Assessment

While assessment is preplanned the VCoP does not make provision for observation and as such it is sometimes hard to determine if the work presented was indeed student’s work or there was a backup support. As a result, the process of measuring the student’s progress could be misleading if the work is not students. It also became apparent that the evaluation of the effectiveness of teaching and learning as inclusive and supportive could be complex and difficult. For instance, in reflecting about the effectiveness of teaching and learning one of the instructors has this to say:

I think we need to have some mechanisms to evaluate if indeed the teaching and learning as it happens within the VCoP is as effective as for example, face to face teaching and learning. While the feedback we get from students is positive about the process, I realized that their assessment performances were not that significantly different from the pre-pandemic times.

On the other hand, the VCoP makes a rightful provision for continuous assessment. The students are engaged on an ongoing process and simultaneously VCoP provides diagnostic feedback to instructors about the effectiveness of teaching and students’ progress. Reflecting on the significance of continuous assessment one of the instructors commented: “I think on VCoP we are able to track the improvement of student’s performances as they are engaged continuously on formative assessment tasks”

DISCUSSION

The VCoP's notion of access is rather a process than a physical meeting (Kirschner & Lai, 2007). It is characterized by online communication and active engagement. This study has shown that "access" in virtual terms is easy, but careful planning is needed to ensure that communication, interaction and engagement are smoother processes. An individual access plan for students with disability is critical i.e. in this study an individual programmed instruction was an important innovative teaching and learning strategy to respond to students with special needs or disability.

As Cox (2005) puts it, VCoP is a process of continual interactive engagement. The study has demonstrated that to keep instructors and students engaged the VCoP processes of input to teaching and learning process by way of instructor led tasks and student led reflections and discussion by both help, first, identify learning and teaching gaps, second, ensured a dialogical process to solve the impediment of teaching and learning process, collectively and amicably.

Ainscow (2005) postulates that collaboration is key for inclusion. This was demonstrated by this study as VCoP provides an opportunity for collective support for students. As Cox (2005) echoed by Brown & Duguid (1991) state the VCoP provide shared repertoires of resources, experiences and tools to ensure a unified way of working. In this study, it was evident that the shared experiences of all was as important to collective learning and development by both instructors and students.

While VCoP emphasizes the collective over individual, in context of support the study has demonstrated that within a collective VCoP process, there was a need to respond individually to the challenges both instructors and students experience. As Wenger (1998) suggests members of CoP develop their own social identity in the context of individual membership.

Furthermore, individual approach leads to equitable learning, that means the student's needs can be addressed. For instance, Baron and Cogiltay (2006) posit that VCoP provide a platform for knowledge management, which means the knowledge structure, content and volume can be manipulated to fit the goals of students learning and thus support students in unique ways to address their learning needs, barriers and vulnerability (Mortier et al, 2010).

VCoP provides a platform for instructors and students to communicate about their practices. On the instructor's side it is more about reflecting on the appropriateness and effectiveness of methods while on the students side it is about reflecting on learning progress. This reflexive process is helpful in identifying the gaps and challenges. Kirschner and Lai (2010) postulate that reflective learning and engagement when dialogical empower students as they are able to voice their tears and concerns regarding the learning process.

VCoP allows diverse opinions and suggestions about teaching and learning. In this study this process created a leadership vacuum. The study has shown that there is a need for coherent leadership if a VCoP was going to be an efficient process. Cox (2005) talks about power relations in the group which if not addressed could derail the process of teaching and learning. In response to this, Baker and Beams (2010) recommend a bottom-up decision-making process to ensure the voice of the voiceless and ensure that there is balance between all parties.

The process of teaching and learning in VCoP is self-regulatory. As a result, the VCoP has to put in place a mechanism to assess the progress of the process of teaching and learning and diagnose challenges. Ampartzaki et. al. (2012) states that VCoP should be a platform to evaluate and re-evaluate knowledge and practice.

FUTURE DIRECTIONS

The process of student learning has been found to be effective when students are in charge of their own learning. The VCoP in this study to a great extent was instructor led. It could be interesting to understand the student led VCoP as it would ensure student voices in the process of teaching and learning in accordance with the principle of student centeredness.

CONCLUSION

The shift toward online modes of teaching and learning was drastic as a result of Covid-19 pandemic. Therefore, post pandemic the process to develop online approaches continues. While this study has obviously started a conversation about VCoP and collaborative action research, the process to develop and learn about virtual platforms for teaching and learning is a journey rather than a destination. The main lessons drawn from this study is the significance of the following in the formation of VCoP:

- Planning is important for the success of VCoP;
- Interactive-ness between members is important for shared understanding of process and content;
- Collaboration is crucial for the support of vulnerable members of the VCoP;
- Cooperation allows members of the VCoP to learn from one another;
- VCoP allows share responsibility between students and instructors;
- Student centeredness is critical for student led learning and allows the student voices which is important for student empowerment.

This study therefore, should be seen as a contribution to debates about virtual teaching and learning and some aspects may not be conclusive as a result. However, the study lays a firm foundation about VCoP with CAR as an alternative approach to make virtual learning and teaching inclusive and efficient.

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