
Citation:

Temple Clothier, A and Matheson, D (2020) Twelve Tips for Using Co-creation for Value Creation and Professional Development. MedEdPublish, 9 (1). ISSN 2312-7996 DOI: <https://doi.org/10.15694/mep.2020.000194.1>

Link to Leeds Beckett Repository record:

<https://eprints.leedsbeckett.ac.uk/id/eprint/7131/>

Document Version:

Article (Published Version)

Creative Commons: Attribution-Share Alike 4.0

The aim of the Leeds Beckett Repository is to provide open access to our research, as required by funder policies and permitted by publishers and copyright law.

The Leeds Beckett repository holds a wide range of publications, each of which has been checked for copyright and the relevant embargo period has been applied by the Research Services team.

We operate on a standard take-down policy. If you are the author or publisher of an output and you would like it removed from the repository, please [contact us](#) and we will investigate on a case-by-case basis.

Each thesis in the repository has been cleared where necessary by the author for third party copyright. If you would like a thesis to be removed from the repository or believe there is an issue with copyright, please contact us on openaccess@leedsbeckett.ac.uk and we will investigate on a case-by-case basis.

Twelve Tips for Using Co-creation for Value Creation and Professional Development

Anne Temple Clothier[1], David Matheson[2]

Corresponding author: Dr Anne Temple Clothier a.temple-clothier@leedsbeckett.ac.uk

Institution: 1. Leeds Beckett University, 2. University of Wolverhampton

Categories: Educational Strategies, Learning Outcomes/Competency, Teaching and Learning, Continuing Professional Development, Undergraduate/Graduate

Received: 16/06/2020

Published: 14/09/2020

Abstract

A growing body of research advocates the positive benefits of using co-creation projects to add value to existing services and practices and to enhance professional development. We present a practical guide to adopting the democratic principles of co-creation and structuring a project effectively. From identifying the initial focus, we provide advice concerning how to create a Mission Statement, identify objectives, and develop a cohesive learning community. We also outline how using measurable outcomes and an agreed timescale, it is possible to co-create activities that are both democratic and inclusive. Whilst co-creation can take place in face-to-face or virtual settings, we suggest ways that engaging with technology will enhance the creative elements, and how reflective practice underpins the career developments taking place. Finally, we explore the value associated with evaluating the project, and identifying avenues for the dissemination of its achievements.

Keywords: Co-creation; professional development; value-added

Introduction

Aiming for 'excellence' is an essential part of all medical education (GMC, 2016). Practitioners at all levels require constant skills updates, and to satisfy career development aspirations.

Co-creation can be used to effectively facilitate the development of professional practice, and creatively explore alternative ways of working and developing teamwork. Co-creation projects allow the application of skills/knowledge in novel contexts, add depth to learning, and can be conducted on-line.

We present theoretical grounding advocating the effectiveness of co-creation as a developmental tool, then a practical guide to scaffolding a project.

Advocating, along with (Lee, Olson and Trimi, 2012) the adoption of a co-creation paradigm, Ramaswamy and Ozcan (2014) suggest there has been a paradigm shift in the way that organisations, and individuals, create value, and forward a more dynamic approach whereby 'Individuals, not institutions, are ... at the center of value creation'

(p.xv).

The co-creation paradigm includes:

- Interactions as the locus of value creation;
- Jointly creating and evolving value with stake holding individuals; ...
- Individuated experience as the basis of outcomes of value, and
- Wealth-welfare-wellbeing as the basis of joint aspirations. (Ramaswamy and Ozcan, 2014, p.xvii)

This involves democratic communities of practice, creatively utilising resources, adding value to products/services and professional practice. With wealth-welfare-wellbeing underpinning these aspirations, it is likely that participants and stakeholders will benefit. However, there is an inherent uncertainty, and shared responsibility, as resources are navigated to create value.

Much research emphasises the developmental benefits for those participating in co-creation activities (for example, (Temple Clothier and Matheson, 2019; Smørvik and Vespestad, 2020). The co-creation working group becomes a 'learning organisation' (Senge, 1990, p.3)

Paralleling Wenger's (1999) community of practice model, Broadley, Martin and Curtis (2019) advocate learning communities, whereby members develop a sense of belonging; create a shared vision, set of values and purpose; and negotiate purpose, goals and accountability. In this sense, a co-creating democratic intellectual community (Hutchings and Huber, 2010; Bovill, Cook-Sather and Felten, 2011; Barber and King, 2017) has the power to determine, shape and execute a task, and effectively create or strengthen a learning community, or community of practice.

The co-creation process 'privileges peer-based support and communication, educational facilitation (rather than teaching) and learner self-efficacy' (García-Peñalvo *et al.*, 2013, p.18), and may result in producing a learner community far quicker than traditional professional development opportunities. Smørvik and Vespestad (2020, p.1) suggest that a co-creation pedagogy creates 'a direct and entertaining presentation of theories and its usefulness'. As such, co-creation may provide a relatively enjoyable route to creating a learning community and strengthen affiliations between members.

Effective co-creation projects add value to products/services, develop agency, enhance professional understanding and foster connections to peers, and wider multidisciplinary teams. They instigate and instil practices that develop theoretical and practical acumen, benefiting the participants, and their community of practice.

The following Tips detail actions to underpin a co-creation project and facilitate effective professional development.

Twelve Tips for Using Co-creation for Value Creation and Professional Development

The Twelve Tips assist with the structure and dialogue when using co-creation as a pedagogy for value creation and professional development.

1. Identify a challenge

Co-creation projects are driven by a problem-solving approach (Sanders and Simons, 2009) to achieve a new objective, or reduce the resources needed to fulfil an existing one. As such, they require creativity, collaboration and agency.

When instigating a co-creation opportunity, it is desirable to identify a project with values that may resonate with its participants. Focusing on improving an area of professional practice or designing an innovation are some of the possibilities. It could involve the development of new technical skills, or strategies to support interpersonal issues such as emotional reliance, or post-traumatic recovery. Whether the aim is to create something new, or add value to an existing scheme, it is desirable to consider a win-win scenario where the participants are likely to obtain intrinsic rewards in return for their investment.

Co-creation provides each participant the opportunity to share their expertise and experiences. It draws on and enhances individual personal empowerment, capacity to analyse, solve problems and express ideas. It requires a flexible approach to multi-disciplinary working, cross-hierarchical communication, and open participation and discussion. Breaking down traditional social and professional structures allows original and creative ideas to emerge.

Once a project (or range of projects) is identified, invite participants to an initial scoping exercise.

2. Co-create a Mission Statement and identify individual objectives

In scoping, it is important that the group negotiates a clear mission statement/objective, a well-defined task, and identifies the goal. This provides focus to measure progression, and create the unifying elements of group membership

Differences may occur between the group's objectives, and the individuals' objectives. Therefore, initial discussions must include what the members' development needs and objectives are, and how these can be met.

It is also beneficial to explore the preferred learning/working styles (Nja *et al.*, 2019; Stander, Grimmer and Brink, 2019) and working practices within the group. Who enjoys new experiences? Who is relatively risk-averse? Who is methodical? Who is theoretical? Who is practical? What broader social and professional networks might they tap into? What unknown resources are contained within this group? By exploring this, some of the characteristics and strengths of the group and facilitate conversations and connections between its membership will be uncovered.

It is essential to agree when, and how, the group will come together; whether face-to-face or on-line. Setting a clear schedule for collaboration provides structure and security for those involved. Whilst much communication and development will likely take place outside these scheduled sessions, it is within them that the individual achievements will be shared.

It is also beneficial to establish a standing agenda for the group sessions. It should be minimal, to not disturb the organic development of the work; an example is:

- Review developments since last session
- Identify further action points needed
- Record of the allocation of tasks (based on willingness and skills)
- Identify any additional resources required.

It is also desirable to identify (at this early stage) what personal benefits are hoped from participation.

3. Recognise that Teams Take Time to Develop

Teams are more than a collection of individuals, and, if facilitated correctly, 'the whole is greater than the sum of its

parts' (Aristotle, 350BCE/2016, 1045a.8–10).

There are patterns to group development (Tuckman, 1965; Tuckman and Jensen, 1977), and to know this is empowering. At its formation, there will be no more than a collection of individuals who, perhaps tentatively, identify with the purpose of the group. Whilst the group objectives are negotiated, and working practices are established, members may feel anxious as they attempt to make a favourable impression, connect with each other and establish their position within the group.

As the group begins to work together, and some forward their views in a more open and perhaps forceful way than others, tensions may emerge. Disagreements and challenges are an integral part of negotiation, and some conflict may occur. This is necessary, and it is important to reveal the different perceptions, knowledge, experience and values contained within the co-creation project. However, respectful dialogue must be observed, and working protocols established.

The group needs to determine what it considers acceptable behaviour, which must not breach professional conduct guidelines. Issues such as the appropriate degree of self-disclosure, levels of commitment, standards of performance are open to discussion and negotiation.

When the group has worked through these initial stages that it will become a cohesive performing group, sharing vision, strategies for practice, agreed values and cultural norms. This agreement establishes effective working practices are established, and therein commitment to the collective is found (Tuckman, 1965; Tuckman and Jensen, 1977).

4. Identify Measurable Outcomes

It is important to monitor progression, the extent of the developments, and the benefits of achieving them. The principles of Management by Objectives (Drucker, 1954), and the adoption of a SMART framework (Doran, 1981), provide an effective tool to guide goal setting and monitoring.

Goals should be:

- Specific – What is to be achieved
- Measurable – Detail what success will look like
- Achievable (Agreed upon) – Negotiate and accept what is to be achieved
- Realistic – Ensure it is possible to achieve the desired result
- Time-based – Agree the timeframe for reaching the outcome.

Members are likely to be familiar with this framework, and it is particularly important in co-creation that a consensus is reached before the SMART objectives are adopted. It is also noteworthy that a consensus can change these targets, at any time, for any reason.

5. Agree Timescales

As vague goals do not focus attention, it is essential to create a vision (Yan, Lei and Keye, 2019) and refer to it often. To determine the working practices within the group, agreement is needed on some key points:

- What is the length of time devoted to the working party/project?
- What is the time commitment expected from each member?
- What is the timeline for the creation of the output?
- How to check activity against it?
- Is there a fall-back plan?

Recognising achievements *en route* makes it easier to measure progress in small steps. Referring to the starting point enhances motivation and confirms progress being made.

Move at a pace that is comfortable, determine how much time and effort each member can commit, and allow that to set the pace. In a democratic community, scope and pace are negotiated not mandated. Be realistic, whatever is achieved is enough, and the wellbeing of the group is as important as the outcome. Set time bound markers for achievement, but do not be afraid to move them.

6. Co-create Activities - Be Democratic

Co-creation is built on egalitarian principles, and facilitators must relinquish any notions of power (Barber and King, 2017, p.1054). Good characteristics of democratic communication include positive self-concepts, a degree of self-disclosure, being responsive to other people's feelings and ideas, awarding praise, and avoiding the dogmatic and didactic.

Effective working practices require a holistic approach in the recognition of others. This is not a meeting of minds, but of people, their physical and emotional needs being as important as the intellect and expertise they bring to the project. All activities should be scheduled so that physical needs can be met, and safety assured. Impromptu breaks can be negotiated, as can early finishes, if it suits the needs of the members. Negotiation is underpinned with meaningful, supportive and active listening.

7. Collaborate Activities - Be Inclusive

To convincingly feel part of a 'community' requires sharing 'a culture with norms, values and identity, and mutual interests and objectives' (Rowley, Kupiec-Teahan and Leeming, 2007, p.138). Therefore, although a collection of individuals may technically be part of a team, it will take time for the group's inherent values, norms and practices to become evident. During their establishment, many issues may distort the communication process and result in misunderstandings and confusion. Be aware that professional status, power relationships, education and experience may traditionally be used to denote superiority or inferiority - in co-creation these distinctions should not exist.

Emotions such as competitiveness, jealousy, low self-esteem, insecurity, vulnerability are to be acknowledged, and support given whenever possible.

The strength of inclusivity in co-creation comes out of the recognition of the unifying humanity on which it is based. Beyond that, the richness of difference enhances the resources and possibilities that can be perceived/achieved, by working in unison.

8. Co-create Activities - Use On-Line Channels

The unprecedented times of COVID-19 have heightened possibilities for on-line networking and connections. Increased and alternative engagement has been facilitated at individual, team and organisational levels, and the ability to surpass 'the big constraints of time and space' and enable 'access on [an] anytime and anywhere basis' (Kumar and Nanda, 2020, p.97) is highly beneficial. Given the cost effectiveness of this opportunity (Füller *et al.*, 2009, p.72) conclude that the 'multimedia-rich interaction opportunities offered by the Internet and the existence of online communities, virtual co-creation has become a suitable means of creating value.'

Using internet applications to facilitate the rapid exchange of suggestions and feedback is an integral part of the co-creation process. Whilst the pre-determined schedule of collaborative workshops provides opportunities for discussion, most 'work' occurs on an individual basis between these events. Thus, members frequently utilise their personal preferences of on-line communication to maintain connectiveness, forward new ideas, seek support and identify resources.

It is useful to identify what communication channels are preferred by the members and set up a 'group-chat' using whatever platform is most comfortable. In one sense this group-chat becomes a 'knowledge room' where a user provides 'the initial sparks to ignite the creation process and invite other users' (Ojo *et al.*, 2018, p.2). It facilitates dialogue 'where users can collaboratively contribute to knowledge construction' and the 'knowledge creation process terminates when there is an agreement on the co-created content ... [indicating] ...a sufficient agreement on the identified issues, generated ideas, and achieved outcomes'(Ojo *et al.*, 2018, p.2).

9. Co-create Activities - Use Reflective Practice

Reflective practice (Schön, 1983; D Kolb, 1984; A Kolb and Kolb, 2017) involves an individual attempting to explore their actions, feelings, interpretations and judgements from the perspective of an external observer. It is sometimes referred to as 'witness consciousness' (Sager, 2008) and is presented as though the individual is viewing the situation, and their involvement in it, from a dispassionate 'helicopter view'.

It is advisable for participants to keep a reflective journal throughout the duration of the project. However, the frequency with which they create entries is at their discretion. The advantage of using this retrospective activity is that it is free from the urgency and pressures of the immediate situation, and it can be empowered by feedback and ideas from others. In this sense, some elements of the reflections themselves may be co-created (Densten and Gray, 2001).

One possible way to structure the reflections can be drawn from what (Peters, 1991) describes as a four-step protocol called 'DATA'

- Describe: the basic elements of the problem, task or situations;
- Analyse: identify assumptions beliefs, rules, motives and actions underlying the current approach;
- Theorise: what alternatives are possible? Comparative merits and drawbacks;
- Act: try out the new approach, evaluate the results.

The reflective diary can be used to identify what learning has taken place, and what practices and beliefs have consequently changed. It is important to emphasise that 'experience' is not determined by how much time is spent on an activity, but rather on what is derived from the time that is spent.

10. Co-create Activities - Identify the Career Development Taking Place

At the initial meeting participants were asked to consider ‘what the members development objectives are, what their development needs are, and how these can be met?’ Throughout the project, participants’ focused reflections may include:

- What do they wish to achieve for themselves? This may involve improved personal competence, a better work/life balance, or something needed to fulfil career aspirations.
- What might they need to do as a result of targets set during a professional performance review? i.e. Do they need to develop their time management skills, master a new piece of equipment, or enhance their digital literacy?
- What do they need to achieve to satisfy the requirements of their organisation: Do they need to develop new professional networks, engage with change management, or strategically manage project development?

Whilst it is advisable to prioritise these development needs, it is necessary to consider: What activities (undertaken during the co-creation project) effectively evidence that this development has taken place? How might opportunities to meet other development needs be identified/created during the project? However, it is important to note that whilst group members may strive to satisfy these development needs, it is not the responsibility of the project to ensure that they are met.

11. Evaluate

It is necessary to reflect on what has been achieved in order to develop an objective and systematic approach to improving the effectiveness, and ease, of different ways of working. It is also beneficial to identify what has been learned, adapted, innovated and implemented in terms of effective behaviour patterns.

- Technical Evaluations could include: What were the relative strengths to the techniques and strategies used?
- Practical Evaluations could include: What has the process revealed about the motives, behaviours, values, morals and ethical dimensions of professional practice?
- Critical Evaluations could include: What has the work shown about the importance of the working contexts. i.e. organisational ethos, political social and economic environment. How are these constructions of reality constituted? This is important as it is only by radically questioning the dominant discourses, practices and values, that professional activity will be changed.

An overarching evaluation of the process should encourage each participant to consider: What is the distance travelled? What have been the benefits? What challenges remain? How might they be overcome? and identify suitable routes for further action.

12. Disseminate

According to Balas and Boren (2000, p.66) ‘it takes an average of 17 years for research evidence to reach clinical practice’ and as such there is a huge divide between research knowledge and professional practice. We suggest that co-creation outputs may have a more timely and significant impact on the practices of those involved, and the context within which they take place. However, for that to occur, some ‘publicity’ concerning the outcomes requires consideration and strategy.

Dissemination could range from peer review publications, conference papers, press releases, blog posts, a line on a CV, or acknowledgement in a formal Record of Achievement. Each of these have merit and are worthy of consideration.

However, if dissemination is intended, strict ethical protocol must be observed. This will require forward planning and obtaining informed consent before any data is collected.

Negotiating channels of dissemination can occur at any time during the project, but we would suggest that deciding on a mission, and assessing who needs to know about the outcome, could go hand-in-hand during the initial scoping exercise. This provides clarity, focus and connection.

Conclusion

We recognise that co-creation will be unsuitable to meet every training need and may not be a comfortable experience for those who prefer not to give-up power or status. However, we urge consideration of this methodology. Because it may not be possible to maintain all traditional training routes, given the need for social distancing, we offer co-creation as an alternative that can be accessed on-line and from remote settings.

The Tips are drawn from our own experiences of facilitating these projects, by adapting them to work with a variety of democratic communities you would experience the freedom, passion and pleasure that co-creation provides.

Take Home Messages

- Co-creation uses a democratic community to add value to a product or service.
- Cocreation is an effective, and creative pedagogy.
- Co-creation is a suitable pedagogy for on-line professional development.
- The Twelve Tips provided will assist in structuring some of the interaction, and processes, to enhance subsequent outcomes.

Notes On Contributors

Anne Temple Clothier: Senior Lecturer for Higher Education at Leeds Beckett University, UK. She has significant experience facilitating co-creation projects. ORCID ID: <https://orcid.org/0000-0002-0286-5118>

David Matheson: Reader in Education for Health at the University of Wolverhampton, UK. His current research interests include professional education in health, prostate cancer, and patient voice and patient-reported outcomes. ORCID ID: <https://orcid.org/0000-0002-3695-3167>

Acknowledgements

None.

Bibliography/References

- Aristotle (350BCE/2016) 'Metaphysics Book VIII, 1045a.8–10', <http://classics.mit.edu/Aristotle/metaphysics.1.i.html> (Accessed: 04/06/2020).
- Balas, E. A. and Boren, S. A. (2000) 'Managing clinical knowledge for health care improvement', *Yearbook of Medical Informatics*, 9(1), pp. 65-70, <http://hdl.handle.net/10675.2/617990> (Accessed: 04/06/2020).
- Barber, W. and King, S. (2017) 'Developing creative and critically reflective digital learning communities', *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 11(6), pp. 1504-1508, <https://pdfs.semanticscholar.org/113d/4f33f8df8ddeb351e0c014b88b89272eaabb.pdf> (Accessed: 04/06/2020).
- Bovill, C., Cook-Sather, A. and Felten, P. (2011) 'Students as co-creators of teaching approaches, course design, and curricula: implications for academic developers', *International Journal for Academic Development*, 16(2), pp. 133-145. <https://doi.org/10.1080/1360144X.2011.568690>
- Broadley, T., Martin, R. and Curtis, E. (2019) 'Rethinking professional experience through a learning community model: toward a culture change', *Frontiers in Education*, 4, pp. 1-15. <https://doi.org/10.3389/feduc.2019.00022>
- Densten, I. L. and Gray, J. H. (2001) 'Leadership development and reflection: what is the connection?', *International Journal of Educational Management*. <https://doi.org/10.1108/09513540110384466>
- Doran, G. T. (1981) 'There's a SMART way to write management's goals and objectives', *Management review*, 70(11), pp. 35-36, <https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf> (Accessed: 04/06/2020).
- Drucker, P. (1954) 'The Practice of Management'. New York: Harper Row.
- Füller, J., Mühlbacher, H., Matzler, K. and Jawecki, G. (2009) 'Consumer empowerment through internet-based co-creation', *Journal of Management Information Systems*, 26(3), pp. 71-102. <https://doi.org/10.2753/MIS0742-1222260303>
- García-Peñalvo, F. J., Conde, M. Á., Johnson, M. and Alier, M. (2013) 'Knowledge co-creation process based on informal learning competences tagging and recognition', *International Journal of Human Capital and Information Technology Professionals (IJHCITP)*, 4(4), pp. 18-30. <https://doi.org/10.4018/ijhcitp.2013100102>
- GMC (2016) *Promoting excellence: standards for medical education and training*. General Medical Council.
- Hutchings, P. and Huber, M. T. (2010) *Citizenship across the curriculum*. Indianapolis: Indiana University Press.
- Kolb, A. and Kolb, D. (2017) *The experiential educator: Principles and practices of experiential learning*. Kaunakakai, HI: Experience based learning systems.
- Kolb, D. (1984) *Experience as the source of learning and development*. Upper Sadle River: Prentice Hall.
- Kumar, V. and Nanda, P. (2020) 'Social Media as a Tool in Higher Education: A Pedagogical Perspective', in *Handbook of Research on Diverse Teaching Strategies for the Technology-Rich Classroom*. Hershey PA: IGI Global, pp. 239-253.
- Lee, S. M., Olson, D. L. and Trimi, S. (2012) 'Co-innovation: convergenomics, collaboration, and co-creation for organizational values', *Management Decision*, 50(5), pp. 817-831. <https://doi.org/10.1108/00251741211227528>

- Nja, C. O., Umali, C.-U. B., Asuquo, E. E. and Orim, R. E. (2019) 'The influence of learning styles on academic performance among science education undergraduates at the University of Calabar', *Educational Research and Reviews*, 14(17), pp. 618-624. <https://doi.org/10.5897/ERR2019.3806>
- Ojo, A., Stasiewicz, A., Porwol, L., Petta, A., et al. (2018) *Proceedings of the 19th Annual International Conference on Digital Government Research: Governance in the Data Age*. Delft. Digital Government Society. Available at: <https://doi.org/10.1145/3209281.3209411>
- Peters, J. M. (1991) 'Strategies for Reflective Practice', *New Directions for Adult and Continuing Education*, 51, pp. 89-96. <https://doi.org/10.1002/ace.36719915111>
- Ramaswamy, V. and Ozcan, K. (2014) *The co-creation paradigm*. Stanford, CA: Stanford University Press.
- Rowley, J., Kupiec-Teahan, B. and Leeming, E. (2007) 'Customer community and co-creation: a case study', *Marketing Intelligence & Planning*, 25(2), pp. 136-146. <https://doi.org/10.1108/02634500710737924>
- Sager, P. (2008) 'Witness consciousness in the development of the individual', *MLA The Barfield School, Sunbridge College*, 20, http://threestonestudio.org/Three_Stone_Studio/Witness_Consciousness_files/PCSager (Accessed: 04/06/2020).
- Sanders, L. and Simons, G. (2009) 'A social vision for value co-creation in design', *Open Source Business Resource*, (December 2009), <https://timreview.ca/article/310> (Accessed: 04/06/2020).
- Schön, D. (1983) *The Reflective Practitioner*. New York: Basic Books.
- Senge, P. M. (1990) *The fifth discipline: The art and practice of the learning organization*. London: Random House, (Accessed: 29/08/2019).
- Smørsvik, K. K. and Vespestad, M. K. (2020) 'Bridging marketing and higher education: resource integration, co-creation and student learning', *Journal of Marketing for Higher Education*, pp. 1-15. <https://doi.org/10.1080/08841241.2020.1728465>
- Stander, J., Grimmer, K. and Brink, Y. (2019) 'Learning styles of physiotherapists: a systematic scoping review', *BMC medical education*, 19(1), pp. 1-9, <https://doi.org/10.1186/s12909-018-1434-5>
- Temple Clothier, A. and Matheson, D. (2019) 'Using co-creation as a pedagogic method for the professional development of students undertaking a BA (Hons) in education studies', *Journal of Further and Higher Education*, 43(6), pp. 826-838. <https://doi.org/10.1080/0309877X.2017.1409344>
- Tuckman, B. W. (1965) 'Developmental sequence in small groups', *Psychological Bulletin*, 63(6), p. 384, <https://doi.org/10.1037/h0022100>
- Tuckman, B. W. and Jensen, M. A. C. (1977) 'Stages of small-group development revisited', *Group & Organization Studies*, 2(4), pp. 419-427. <https://doi.org/10.1177/105960117700200404>
- Wenger, E. (1999) *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press.
- Yan, W., Lei, R. and Keye, L. (2019) *2019 IEEE Eurasia Conference on Biomedical Engineering, Healthcare and Sustainability (ECBIOS)*. Okinawa. IEEE.

Appendices

None.

Declarations

The author has declared that there are no conflicts of interest.

This has been published under Creative Commons "CC BY 4.0" (<https://creativecommons.org/licenses/by-sa/4.0/>)

Ethics Statement

Ethical approval not necessary as no data involved.

External Funding

This article has not had any External Funding

MedEdPublish: rapid, post-publication, peer-reviewed articles on healthcare professions' education. For more information please visit www.mededpublish.org or contact mededpublish@dundee.ac.uk.