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Social Capital and Value Creation in Learning Communities: Evidence from a Team-Lecture Hybrid (TLH) Instructional Strategy

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Four cycles of a value creation conceptual framework including: immediate value; potential value; applied value; and realized value, were used to analyze the role of social capital in the creation of experienced and aspired value in collaborative learning. Students' narratives on team development dynamics in a Team Lecture Hybrid (TLH) instructional design implemented from August 2011 to May 2016 were analyzed. The study covered 201 public affairs and healthcare administration students. in 40 in-class permanent teams, 15 courses, and straddling two US institutions of higher learning. The findings suggested an alignment between social capital and performance in in-class permanent teams. The social interactions created immediate, potential, applied, and realized value, and the results appear to validate the explanatory strength of the value creation framework in relation to social capital as a value creator and as value created in learning communities. The value created from social capital dynamics in the learning community aligns with the anticipated outcomes of TLH and appeared to support the TLH design theory hypothesizing improved performance when we combine active learners and an active instructor in the same learning community. In a mezzo learning environment, both students and their instructor created and benefited from social capital. The recommendation is for value creation drivers uncovered in this study to be given significant consideration when designing objectives, activities, structures, and cultures in learning communities.

The phenomenon of social capital is often difficult to assimilate due to its lack of clarity (Hean et. al., 2004), and its intangible and multifarious character (Coleman, 1988; Bourdieu, 1997). However, the lack of concept clarity does not overshadow the inescapable added value of relations borne of social interactions that stimulate members of network communities to achieve specific aims (Almuqrin et al., 2020). This "social glue" known as "social capital" (Coleman, 1988; Affanas'ev et. al, 2017) is inherent in learning communities and advances individual and collective learning outcomes (Michaelson et al., 1993; Haidet et al., 2002; McInerney & Fink, 2003; Gomez et al., 2010; Tan et al., 2011; Vaughan et. al., 2015, Dingyloudi et al., 2019; Venter, 2019).

The purpose of this article is to understand the contributions of social capital to individual and collective outcomes in a learning community which includes students in permanent teams and their instructor. The study analyzed data from public affairs and healthcare administration students' evaluation of their experience in in-class permanent teams within a Team-Lecture Hybrid (TLH) instructional strategy implemented in two US institutions of higher education, from 2011 to 2016. In this study, social capital was framed as value created, and as a phenomenon that created value for members of in-class permanent teams. A team development framework guided data collection, while a value creation conceptual framework guided data analysis and interpretation. The team development framework including forming, storming, norming, and performing was used as the primary tool for collecting data on student experiences and aspirations in permanent teams for each semester of TLH implementation. Three additional questions, which are not traditionally included in the team development framework, allowed students to reflect on their own performance in teams and the contributions of their instructor to the team learning process. Four cycles of the value creation conceptual framework (Wenger et al., 2011) were used to analyze value perceptions and aspirations of learning community members in in-class permanent teams involving 40 teams, 201 students, and 15 courses.

This article also reflects on the implications of the study findings for the role of social capital in in-class permanent teams, social learning communities, and instructional designs. Patterns in acquired and aspired value derived from reported experiences that can clarify the value creation dynamic around accumulated social capital in permanent teams is studied, as well as the alignment of the created value to anticipated outcomes of the TLH instructional strategy. Clarifying the value creation dynamic in learning communities will provide a road map for constructing ways of promoting the aspirations of learning community members and improving individual and collective performance.

Hypotheses

1. It is hypothesized that permanent team members' narratives of acquired and aspired values due to their learning community membership will align with the value creation framework cycles and desired outcomes of the TLH.
2. In addition, it is hypothesized that when we combine active learners and an active instructor in the same learning community, there is improved student performance.

Literature Review

Multidimensional Nature of Social Capital

Many studies have documented the different manifestations and influences of social capital on individual and collective outcomes in learning communities. Yao et al. (2015) determined that social capital is positively related to team learning and knowledge sharing; while team learning is positively related to knowledge sharing; and both social capital and knowledge sharing are positively related to network loyalty. Other studies pointed to the links between social capital generated in interprofessional learning and improvements in desired practice outcomes (Craig et al, 2016). More recent studies show a positive association between offline social capital and online learning interactions across all classes at the individual and dyadic levels **(**Kent et al., 2019). Some found a predictive relationship between social capital and knowledge sharing intentions and behaviors (Almuqrin et al., 2020).

To paint a more concrete picture of social capital, researchers have attempted to explain social capital from various perspectives and varying influences on individual and collective learning. Scholars have identified three dimensions of social capital, including structural, relational, and cognitive (Nahapiet & Ghoshal, 1998; McFadyen & Cannella, 2004; Roxas, 2008). Structural dimension refers to "the overall pattern of connections between actors" (Nahapiet & Ghoshal, 1998, p. 244) and focuses on impersonal linkages among actors, such as network ties and network configurations. The relational dimension focuses on the quality of relationships (McFadyen & Cannella, 2004), which is accumulated through trust, norms, and obligations among actors (Nahapiet & Ghoshal, 1998). The cognitive dimension describes social collectivity or solidarity among actors (Nahapiet & Ghoshal, 1998). Structural, relational, and cognitive dimensions have an effect on knowledge sharing relationship, with structural dimensions having the strongest impact (Han et al., 2020)

Affanas'ev et al. (2017) distinguish between bridging and bonding social capital which parallels structural and relational dimensions described previously. They underscore the necessity to identify special indicators for these types of social capital and their formal and informal components which include cognitive and structural components. The cognitive component encompasses attitudes and social norms (what predisposes people to lead a socially useful way of life). Structural component relates to elements that promote social interaction such as networks and social relations, voluntary associations, formal and informal. Indicators for the cognitive component include trust, readiness to unite, and responsibility for the situation. Indicators for the structural component include degree of participation and possibility to influence the situation (Affanas'ev et. al, 2017).

Value Creation in Learning Communities

Social capital, in its multiple dimensions, contributes to the knowledge assets and performance outcomes of learning communities. In its basic form, a learning community includes people, resources, rituals, norms, dependency, and ties, as well as nodes and holes within different communities (Ozturk & Ozcinar, 2013; Vesely et al., 2007). Learning communities could exist as a single community (Becket et al., 2012) or as multiple or sub-set of communities in a network structure (Maddix, 2013). Teams as learning communities are important structures in the creation and sustainability of value in both organizational and instructional settings. Narrative inquiry has become a common method used to examine value creation.

Value creation in learning communities is a social process involving human agency within a social context (Elkjaer, 2003). Teams are crucial for enabling knowledge creation, learning, knowledge dissemination, and performance (Anderson & West, 1996, 1998; Lawson et al., 2009: Pitsis et al., 2003). Value creation from team learning occurs in five value cycles: 1. immediate value including activities and interactions; 2. potential value, which is knowledge capital including human capital, social capital, resources which could be both tangible and intangible, and transformed ability to learn; 3. applied value covering changes in practice; 4. realized value which is inherent in performance improvement; and 5. reframing value which includes reframing success (Wenger et al., 2011). Value creation occurs at macro, mezzo, and micro levels of social interactions (Affanas'ev et al., 2017), and could be external or internal to a learning structure (Yoon & Hyun, 2010; Chung & Yoon, 2015).

Assessing Value Creation Using Personal and Collective Narratives in Learning Communities

Wenger et al., (2011) present a theoretical framework for promoting and assessing value creation in communities and networks. This framework captures the stories that members tell on the value that networks and communities create when they are used for learning. They also articulate how these activities result in desired outcomes that improve teaching and learning. The focus is on the value that networks or communities create when they are used for social learning activities such as sharing information, tips, and documents; learning from each other's experience; helping each other with challenges; creating knowledge together; keeping up with the field;

stimulating change; and offering new types of professional development opportunities. The framework is a good mechanism for assessing perceived social network value, the aspirations of community members, and their expectations from other participants and the community or network as a whole and could be a basis for recommendations on how to promote the creation of value proactively.

Regardless of the level of social interactions, created and aspired value could be relayed through personal or collective narratives of members themselves (Wenger et al., 2011; Dingyloudi et al., 2019). As experiences evolve, participants in networks or communities have narratives through which we can appreciate what learning is taking place (or not) and what value is created (or not). The primary recipients of value are participants themselves and value can accrue immediately in the short term or in long term at both individual and collective level. Narratives could also be both personal and collective. Collective narratives project the aggregate experience of the entire community or network while personal narratives focus on the experience and voice of an individual member. Both personal and collective narratives could serve as accounts and/or aspirations. Narratives are accounts of what has happened and is happening in the everyday life of a community or network, or they can represent aspirations which are what defines success for a community in terms of the value they are expected to produce (Wenger et al., 2011). Many recent studies have also used narrative inquiry to examine experiences of members in learning communities including conversion narratives used to examine the emotional learning of new community members (Kurtyka, 2017); the examination of narratives of educational action, professional development, sense of belonging of learners in a learning community (Galliazzi, 2018); the use of a narrative approach to examine experiences of co-editing with findings showing a stronger sense of the evolution of our professional selves over time and greater insight and awareness of our strengths and uncertainties (Hayler & Williams, (2018); and life-story interviews used to examine experiences in intentional communities (Pisters et al., 2020).

Macro, mezzo, and micro performance levels cover all spaces in which social capital could be conceptualized and usher in an ecological approach to social capital analysis for learning communities. In-Class permanent teams within a TLH learning strategy (Tataw, 2014) exist at mezzo and micro performance levels.

Team Based Learning (TBL)

Teamwork and collaboration have long been advocated by many educational theories, including constructivist and social learning models (Piaget, 1955; Bruner, 1966; Vygotsky, 1978; Carswell, 2001; Gold, 2001; Hodgson & Watland, 2004), but the adoption of team-based learning as an instructional strategy can be traced to Larry Michaelson in late 1970s who first used it in a large business class (Fink, 2002; Fink & Parmelee, 2008; Mennenga & Smyer, 2010). A variety of studies suggest links between social capital and student learning outcomes in Team Based Learning (TBL) environments including the following: developing students' higher-level cognitive skills in large classes, providing social support for at-risk students, promoting the development of inter-professional and team skills (Michaelson et al., 1993; Haidet et al. 2002); improved positive student attitudes and motivation (McInerney & Fink, 2003; Gomez at al., 2010); learner-focused communication (Matveeve & Milterb, 2010); analytical and presentation skills, reflective learning, and the application of knowledge and skills in future learning (Matveeve & Milterb, 2010); and critical thinking, creativity, and innovation (Almuqrin et al., 2020). Other documented benefits include improved performance by academically weaker students compared to stronger students (Tan et al., 2011), higher levels of student engagement (Dana, 2007), and overall improved academic performance and better relationships in the learning community (Bilgin & Geban, 2006; Brouwer et al., 2016; Venter, 2019; Cremerius et al., 2021). It has also been demonstrated that lower levels of the social capital that mediates interaction with peers, tutors and clinicians may be tied to underperformance by ethnic minority students because minority students may be cut off from potential and actual resources that facilitate learning and achievement (Vaughan et. al., 2015).

TBL harnesses various dimensions of social capital including structural, relational, and cognitive characteristics. Bridging and bonding (Affanas'ev et al., 2017) occurs in order to move a group through the four team formation stages: forming, storming, norming, and performing.

The Team-Lecture Hybrid (TLH) Instructional Strategy in In-Class Permanent Teams

The Team-Lecture hybrid (TLH) instructional design adopts and improves on team-based learning strategies by enlarging the learner's empowerment zone in the learning environment while maintaining the instructor's leadership as an active teacher. TLH instructional strategy was initially implemented in healthcare administration and public affairs in-class permanent teams in two US institutions of higher learning from 2011 to 2016.

The Team-Lecture hybrid (TLH) instructional design is guided by an integrated conceptual framework linking objectivist, constructivist, and social learning approaches to shape a learner-centered and learner-

oriented strategy. The purpose of the team-lecture hybrid design is to expand the learner's empowerment zone in healthcare administration and public affairs courses and therefore improve student outcomes. The purpose is achieved through the following specific aims:

1. Integrate in-class permanent teams in the instructional design and delivery of healthcare administration and public affairs courses.
2. Maintain the role of the instructor as the leader of the instructional environment and as an active teacher.
3. Maintain the student as the leader of his own learning.
4. Share course assessment and content development space with the students.
5. Align course design and activities with the student characteristics.
6. Create multiple learning communities to support meaningful learning and active teaching.
7. Improve knowledge capital for the learner in learning communities. (Tataw, 2014, pp. 183-84)

The TLH design focuses on micro and mezzo level networks and communities. Growing out of the Team Based Learning traditions, the Team-Lecture hybrid (TLH) instructional design implemented in in-class permanent teams integrates objectivist, constructivist, and social learning approaches and brings together the active learner and the active instructor in one learning community (Tataw, 2014). The Team-Lecture hybrid strategy shares many similarities and differences with traditional, social learning, and constructivist models (Tataw, 2014). TLH is similar to traditional strategies by retaining lecture formats and relying on active teaching as an organizing principle. The main difference in the team-lecture hybrid and other TBL designs is the magnitude of the instructor's engagement with the active learner and the support the learner receives from other micro learning communities in the mezzo environment.

TLH is guided by principles of team-based learning but depends on a philosophy that sees the teacher as an active instructor. The active teacher departs from the dominant role of the traditional teacher in objectivist approaches but is more engaged than the often-passive facilitating role in constructivists and social learning models. He/she engages with team- learning communities to achieve learning outcomes for the active learner. The active teacher in TLH, relies on student empowerment and interaction for success in clarifying basic learning concepts and making sure foundational knowledge is gained. This is a leader of the instructional environment who does not seek to dominate the learning process and is inspired by a perception of learners as individuals, group members, and listeners, even as they take control of their own learning. Active teachers in their leadership roles use flexible lecture formats which are adapted to the diversity of the learners, and harness the strengths that the different learners bring to the learning environment for the benefit of the different members of its different learning communities. The active teacher also intervenes to provide resources and encourages the reticent and/or struggling student. In short, the active instructor is the student resource person for individuals and teams, and the facilitator and guardian of both the team process, team learning, and active learning (Tataw, 2014).

The learner in the TLH design belongs to two distinct but interrelated learning communities. The first learning community is a permanent team made up of a sub-set of class members, usually about five students, who stay together and work together on problems and projects throughout a semester. The second learning community is the entire instructional community/class which is made up of two or more permanent teams and the instructor. These two communities support the creation of value, both during team activities and during entire instructional learning community activities (Tataw, 2014)

Desired Learner Outcomes in the TLH Instructional Strategy

Participants in the TLH program are expected to demonstrate the following: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student engagement in initiating or contributing to content or other learning activities; 4. Higher student enthusiasm; 5. Increased use of problem-solving skills; and 6. Improved performance evidenced by quality of individual versus group products (Tataw, 2014).

Population and Implementation Setting

The TLH was implemented through in-class permanent teams in public affairs and healthcare administration courses in two institutions in the Midwest and East Coast of the United States from fall 2011 to spring 2016. At the Midwest institution, 80% of students work full or part time, are first-time college attendees in their family, or need additional help to succeed in college due to prior academic deficiencies. The racial and ethnic make-up of the student population at the time of implementation was as follows: 83% white, 0.3% American Indian, 1.4% Asian American, 4.3% African American, 3.0 % Hispanic, 1.4% two or more races, 0.1% non-resident alien, and 6.8% Other (Enrollment Summary, 2011 Fall). At the East Coast USA institution, healthcare administration students arrive with varying

academic strengths and backgrounds. Seventy-five percent of graduate healthcare administration students at the time of implementation worked full or part time. More than 50% needed additional help to succeed in graduate school and do not have prior healthcare industry experience. The ethnic make-up was as follows: 76% white, 10% African American, 6% Hispanic, 6% Asian Pacific, and 8% Other (Fact Book, 2012). About 20% of the students in both institutions faced the common social integration barriers ethnic and economically disadvantaged students faced in mainstream institutions (Vaughan et. al., 2015; Tataw, 2014).

Target Population

Two hundred and one students in 15 undergraduate and graduate public affairs and healthcare administration courses participated in evaluation activities. These included four undergraduates and 11 graduates in four public affairs and 11 healthcare administration courses. Gender and racial/ethnic distribution were as follows: Female (53.6%), Male (62.3%), African American (4.4%), Asian (2.9%), Latino (1.5%), White (91.3%). Age distribution was as follows: 18-24 (46.4%), 25-35 (34.8%), 36-46 (11.6%), and 47-64 (7.3%).

Program Intervention Elements

Instructional Components

The team-lecture hybrid design (TLH) was made up of four instructional components including preparation, application, assessment, and lecture adapted with modifications from Team-based Learning literature (Fink, 2002). Full details of the intervention and variations in implementation are described elsewhere (Tataw, 2014). A summary of the intervention elements is presented next.

The preparation component was made up of two activities: 1. Team Formation where the instructor assigned students to different groups to minimize barriers to group cohesiveness and distribute member resources evenly; and 2. Student Preparation which required students to complete individual assignments before weekly class and group term project activities.

Application occurred during weekly in-class team activities covering weekly group assignments and term-project activities as follows: 1. Use of individual responses from the preparation phase previously mentioned to create a group product; and 2. Collectively work on Group Term Projects in the class; 3. Inter-group peer review of parts or entire group projects as they are completed or become due.

Assessment was usually ongoing throughout the semester and involved both students and instructors. Student roles included the following: 1. Inter-group peer review of group projects as described in the previous preparation section; 2. Intra-group peer review of group member participation in group projects and/or weekly group work by completing an evaluation of each team member of the permanent teams; 3. Reflections on the Team-Lecture Hybrid learning experience by completing a survey instrument assessing the effectiveness of the team-hybrid design; and 4. participation in group process evaluation of the TLH experience using nominal techniques. This article reports the results of the analysis of the data of the fourth assessment activity.

The instructor role included the following activities: facilitate and assess class participation; grade exams; grade group projects; review portfolios; grade weekly group assignments as needed; grade student weekly individual assignments; facilitate process evaluation using nominal techniques.

The lecture components came before or after in-class teamwork depending on the nature of subject matter covered or the specific needs of the learners during a specific class session. Pre-teamwork lectures occurred after the students have completed their individual weekly assignments but before they engaged in teamwork activities. Post-teamwork lectures happened after the teamwork, and integrated matters arising from team discussions.

A Value Creation Conceptual Framework

A value creation conceptual framework (Wenger et al., 2011) is deployed to understand social capital value accounts and aspirations of learning community members. Four out of five cycles in the value creation framework (Wenger et al., 2011) form a conceptual framework which guides the understanding of value creation and aspirations among 201 learning community members in 40 in-class permanent teams.

Wenger et al., (2011) identify five cycles of value creation: Cycle 1. Immediate value involving activities and interactions; Cycle 2. Potential value focused on knowledge capital; Cycle 3. Applied value involving changes in practice; Cycle 4. Realized value centered on performance improvement; Cycle 5. Reframing value which involved a redefining of success. Cycles 1 to 4 are relevant to this study.

Cycle 1. This cycle focuses on immediate value including activities and interactions which can produce value in and of themselves and can be fun and inspiring.

Cycle 2. Potential value could be individual or collective and encompasses knowledge capital which underscores the fact that not all value produced by a community, or a network, is immediately realized. Activities and interactions can

produce "knowledge capital" whose value lies in its potential to be realized later. Knowledge capital can take different forms including personal assets (human capital), relationships and connections (social capital), resources (tangible capital), collective intangible assets (reputational capital), and transformed ability to learn (learning capital). Human capital can take the form of a useful skill, a key piece of information, or a new perspective. It can also consist of innovative ideas to address in a class of problems.

Social capital occurs in all dimensions of knowledge capital, when one considers knowledge as a collective good distributed across a community or network. Therefore, social relations and connections are a form of knowledge capital. Resources (tangible capital) refers to privileged access to certain resources that accrue to participants in a community or network. Collective intangible assets (reputational profession, or the recognition of the strategic relevance of the domain) exist when social assets increase the potential for collective action. Transformed ability to learn (learning capital) occurs when participating in facilitated networks transforms the learning ability of participants. When members have experienced significant learning in networks or communities, they can transfer this experience to other contexts within their community or to other communities (Wenger et al., 2011).

Cycle 3. Applied value involves changes in practice. Knowledge capital is a potential value, which may or may not be put into use. Looking at applied value means identifying the ways practice has changed in the process of leveraging knowledge capital.

Cycle 4. Realized value relates to performance improvement. This refers to the effects the application of knowledge capital is having on achievement.

Cycle 5. Reframing value: Redefining success. The last cycle of value creation is achieved when social learning causes a reconsideration of the learning imperatives and the criteria by which success is defined. It may also mean transforming or leaving behind the existing structure and using this new definition of success to create a new framework.

Neither hierarchy nor direction are to be assumed and learning in these cycles is not a linear but rather a dynamic and complex process in which producing and applying knowledge are tightly intertwined and often indistinguishable. The greatest contribution is that it is a dynamic framework of aspects of value creation to pay attention to. Social capital is created throughout the value cycles and social capital also creates other values that accrue to members individually and collectively (Wenger et al., 2011).

Recent studies using the value creation framework include an analysis which revealed immediate value creation during the early stage of a learning community's formation and the evolution to new activities and interactions associated with further community development (Heemskerk et al. 2021). In another study, social interactions in a learning community created immediate value which generated potential, applied, and realized value, and ultimately, transformed learner perspectives and created reframed value (Mavri et al., 2021).

Four of the value cycles in the value creation framework including immediate, potential, applied, and realized value cycles align with TLH desired outcomes. Increased use of critical thinking threads through all value cycles of value creation framework. Three outcomes: higher student interaction with other students and the instructor; higher student engagement in initiating or contributing to content or other learning activities; and higher student enthusiasm, align with immediate value and potential value creation assets which are inherent in community social capital. Increased use of problem-solving skills aligns with potential and applied value cycles seen in norms and conflict resolution assets. Improved performance, evidenced by quality of individual versus group products, aligns with applied and realized value cycles assets that are tied to performance in the TLH (Tataw, 2014).

Evaluation Methods

Design

Outcomes and implementation integrity of the TLH design as applied in healthcare administration and public affairs courses from August 2011 to May 2016 were assessed using multiple evaluation strategies to measure different objectives and different activities. This article focuses exclusively on a prospective assessment of participants' reported experience of the team process using nominal techniques, relying on qualitative data sources, and a combination of inductive and deductive analysis within a value creation conceptual framework. Qualitative data is categorized using open, axial, and selective coding. Contributions to value creation cycles in the conceptual framework are mapped, and alignments to TLH desired outcomes are determined.

Institutional Review Board Approval

The implementation and evaluation of TLH design was approved by the Institutional Review Boards of the Midwest and East Coast US institutions as expedited studies in 2011, and exempt studies in 2012, respectively.

Recruitment

Program participants were enrollees in public affairs and healthcare administration courses taught by the author. Participants were drawn from a total of 15 courses, 40 teams, and 201 students. Program participation was obligatory for all students since in-class permanent teams' activities were part of the course requirements. Participation in program evaluation activities was voluntary and the students were informed that their participation or non-participation did not affect their grades in the classes.

Sample Selection for Evaluation Purposes

All students in each class under study were recruited to participate in course evaluation activities including participation in group team dynamics assessment and consenting to the analysis of their performance activities as individuals or groups. Students were recruited directly from the class by representatives of the instructor. Students either completed a written consent form or provided verbal informed consent. Recruitment occurred and consent was administered by representatives of the instructor in the absence of the instructor. The instructor's representatives were trained and certified in human subject protection principles and practices.

Inclusion and Exclusion Criteria

To be included in the study, participants had to meet the following criteria: (1) Be a student in one or more of 15 public affairs and healthcare administration courses offered at two United States institutions from 2011–2012 to 2015–2016 academic years; (2) Must have participated in team learning activities in the semester for which the evaluation is being conducted; (3) Must be more than 18 years old; (4) Must be willing to provide a written or verbal consent.

Data Security

No identifying marks were permitted on individual or collective student documented reflections on the team development process. All identifying marks were removed from completed assessments. No identifying marks were entered into the study data base. All of the data for this project were stored in the researcher's office at both institutions of higher learning. All participants in the data collection process were trained on human subject protection principles and practices and certified through the Institutional Review Boards of the Midwest and East Coast United States institutions.

Data Collection and Measures

On the last day of each class, a team process reflection tool was used to facilitate team member individual and collective reflection on the TLH experience using a nominal technique. This involved students' individual responses to survey questions and then the team's collective reflection on their team processes and performance at each stage of team development. Students described their experiences in each team development stage including forming, storming, norming, and performing; first as individuals, then collectively in their in-class permanent teams. In addition, the students responded to three open-ended questions, where participants stated what the team did well during the semester, what they could have done better, and what additional support the instructor could have given the team process or groups. Individual and collective student responses were anonymous and were submitted to the instructor representative for transmission to the instructor.

Data and Theory Saturation

After 23 teams, nine classes, and 128 students, emerging themes became saturated. Therefore, after the second academic year, the author could have stopped data collection without losing any information necessary to understand value creation through social interactions in permanent teams within the TLH instructional design. Other researchers have stopped data collection once they determined data saturation has been achieved (Gupta et al., 2012). Francis et al. (2010) suggest that study protocols should specify a priori, an initial analysis sample and a stopping criterion that says how many more interviews will be conducted, without new shared themes or ideas emerging, before the research team can conclude that data saturation has been achieved. The analysis then proceeds on an ongoing basis until the stopping criterion is met.

In this study, the data was analyzed after 5 years of data collection had ended, so saturation points including the initial analysis sample and stopping criteria were only determined after the data collection was complete but before the data analysis started. The initial analysis sample was 128 students and nine courses. The stopping point for determining saturation was 201 students and six additional classes beyond initial analysis sample. Beyond the point of 128 students and nine courses into data collection, no new additional data was found that

developed new aspects of a conceptual category emerging from open, axial, or selective coding (Glaser and Straus, 1967), and it is likely that the content domain of the construct has been adequately populated (or saturated) and the sample size is big enough for content validity (Guest, Bunce, & Johnson, 2006).

Data Analysis

Within a value creation framework, data analysis was guided by interpretive methods using content, categorical, and frame analysis of student reflections on the team development process. Interpretive thematic analysis (Braun & Clarke, 2006; Cardenas, 2012) made use of already existing and widely adopted stages of team development frames in combination with open-ended questions. This process of analysis involved sorting or coding the data into themes and categories by identifying and analyzing repeating patterns that exist in the data (Braun & Clarke, 2006; Opong, 2016). Data coding included open, axial, and selective coding identified by Strauss and Corbin (1990, 1994, 1998). In open coding, the data sets were broken down into parts and compared for similarities and differences and categorized (Srauss & Corbin, 1998). In axial coding, the subcategories created were refined and categorized into a more abstract conceptual level using the constant comparison method (Straus & Corbin, 1998; La Rossa, 2005). In the selective coding stage, the main categories of all of the data sets were refined and integrated at the level of their properties, dimensions, and relationships. Selective coding occurs at a higher level of abstraction (Strauss & Corbin, 1998), which are tied to the desired outcomes of the TLH design.

Members' narratives were tied to conceptual elements and relationships in the value creation conceptual framework. Open, axial, and selective coding were applied within an interpretive thematic analytic process. Predetermined team development framework topics/questions guided team member reflections on their learning community experiences. In open coding, inductive analysis was used to categorize and interpret responses to semi-structured and open-ended questions. Here emerging themes and frequency of responses from individual and collective reflections structured around the four stages of team development and in three open-ended questions to students and instructor were summarized. In axial coding, emerging primary data patterns were analyzed deductively using established theory constructs (Cutler, 2014). Emerging themes were categorized using social capital value creation cycles. In selective coding, categorized data was used to determine if any desired outcomes of the TLH design were met. Both the thematic categories and value creation cycles of relevance were aligned with desired TLH outcomes to determine if social interactions advanced program outcomes. This predominantly interpretive analysis included implications for value creation and value aspirations in the TLH design and learning communities in general.

Results

In this section, detailed results of the study are presented including the characteristics of the learning communities, frequencies of member responses by categories within topics and by topics as a percentage of all responses. Aggregate numbers and distribution of students, teams, and courses in the four years of TLH implementation are also reported. The study included 201 students, 40 teams, and 15 courses. Each learning community was made up of a mezzo learning community of the entire class and two or more micro-communities of three to six member teams. There were five mezzo learning communities in the Midwest USA university, and 10 mezzo learning communities in the Northeast Coast USA university. Course distribution was as follows: 1 accelerated course, 14 regular semester courses, 4 undergraduate courses, 11 graduate courses, 8 Spring semester courses, and 7 Fall semester courses. The teams ranged from 2 to 5 teams per class with an average of 3 teams per class. Of the 201 students, we had 6 to 36 students per class and 3 to 7 students per team. The average students per team was 5 and average number of students per class was 13. Frequencies ranged from 9% for *norming* to 25% for *What did your group do well?*

Results are summarized by topic as follows.

Forming

There were two thematic categories coded from 70 responses including team process rationale (88.6%) and the social process of team formation (14.4%). The sub-categories in each major thematic category were as follows:

Team Formation Rationale - 62

1. Worked together/acquainted before team formed - 13
2. Individuals took the lead, invited other members - 4
3. Build Groups based on skill sets
4. Came together with a common objective - 6
5. Group was assigned -18
6. Understood each other's expectations.
7. Exchanged contact information - 6
8. We became a team when we named ourselves LJAM
9. Organized according to class seating considered fair
10. Assigned with members from different backgrounds, good mix - 4
17. Never really developed into a team - varying understanding of roles and member expectations - 3

Social Process of Team Formation - 8
11. Met as a group and formed into a team
12. I enjoyed the group
13. Negative feedback made us more cohesive as we tried to solve our common problem
14. Worked to be a team in order to excel
15. Quickly bonded - 4

Responses in the thematic categories of the forming stage of team development aligned with immediate and potential value cycles of the value creation framework and to the following two desired outcomes of TLH: 1. Increased use of critical thinking; and 2. higher student enthusiasm.

Storming

Five thematic categories emerging after open coding of 62 responses were as follows: easily resolved conflict (58.1%); communication (11.3%); cohesiveness/collaboration (21.0%); conflict was not overcome (8.1%). The sub-categories of each thematic category are:

Group A - Easily Resolved Conflict - 36
1. Sort differences quickly – 26
2. All desired unity and avoided arguments for arguments sake
3. Sort out differences professionally without personal attacks – 7
4. Subdued conflict
5. Worked out conflicting work styles and schedules quickly so that our individual work is finished on time

Group B: Communication - 7
6. Read each other's responses
7. Used emails effectively
8. Sort differences through regular communication - 5

Group C: Cohesiveness/Collaboration – 13
9. Group memberships were reshuffled and that was difficult to overcome
10. Traded out member to increase cohesiveness
11. Had similar ideas - 9
12. Worked together to respond to intra- and inter-group negative feedback
13. We learned a lot from each other, it was amazing

Group D – Conflict was not overcome – 5
14. We were in a storming mode throughout the semester
15. Conflicting and shifting ideas on project direction made consensus difficult
16. Had difficulty deciding on the focus of the paper
17. Communication and other problems prolonged conflict throughout the semester
18. Conflicting schedules were the biggest challenge

Group E: Emerging Norms – 1
19. We set roles and rules here, and collectively clarified roles for non-compliant members

Narratives in the thematic categories of the storming phase of team development aligned with the immediate and potential /knowledge value cycles of the value creation framework and the following five desired outcomes of TLH: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student engagement in initiating or contributing to content or other learning activities; 4. Higher student enthusiasm; 5. Increased use of problem-solving skills.

Norming

The two thematic categories from 58 responses were as follows: set rules and standards (86%); applied rules and standards (14%). The sub-categories in the major thematic categories were:

Group A – Set Rules and Standards - 50
1. Set routine roles, responsibilities, & procedures - 33
2. Agreed to communicate via email as main channel of communication - 2
3. No Rules or regulations - 4
4. Set deadlines for each member - 4
5. Agreed on multiple communication channels - 7

Group B: Applied Rules and Standards - 8
6. Lack of solidifying group structure caused problems
7. Read responses together and integrated responses
8. Monitored progress of group members - 3
9. Set a group contract at the beginning of the semester
10. Took turns leading discussions - 2

Narratives in the thematic categories of the norming stage of team development aligned with immediate, potential/knowledge capital, and applied value creation cycles of the value creation framework and the following two TLH desired outcomes: 1. Increased use of critical thinking; and 2. Increased use of problem-solving skills.

Performing

Two thematic categories emerged from 78 responses related to the performing stage of team development including good performance (91%) and poor performance (9%). Sub-categories in the major thematic categories were as follows:

Group A Good Performance - 71
1. Like minded, perform efficiently - 5
2. All ideas considered
3. Assigned roles and leadership—moderator, secretary, editor, etc. - 3
4. Answered all questions raised
5. Hard work
6. Commitment - 2
7. Communication - 2
8. Met deadlines - 19
9. Exceeded expectations of deadlines - 2
10. Worked well with constructive criticisms and peer review - 3
11. Effective Communication - 6
12. Respectful of each other
13. Everyone pulled their own weight - 13
14. We learned from each other - 4
15. Worked out differences
16. Challenged by jobs and health but came through
17. Met regularly - 4
18. We met several times
19. Performed better with the loss of non-compliant member–developed homeostasis

Group B Poor Performance - 7
20. Poor communication
21. Members did not pull their weight, individuals' deadlines and deliverables not met - 2
22. Contributions to the project were lopsided. Some members did more than others
23. Sub-groups met with changing sub-group memberships
24. We were focused on policies rather than root causes—focused on the wrong thing
25. Poor paper due to the difficulties in forming, storming, and norming stages

Narratives of the three thematic categories in the performing stage of team development aligned with potential value/knowledge capital, applied value, and realized value/performance improvement and the following two TLH desired outcomes: 1. Increased use of critical thinking; and 2. Improved performance evidenced by quality of individual versus group products.

What Did Your Group Do Well?

Thematic categories from 157 responses related to this topic included democratic participation (22%); communication (13%); collaboration and commitment to mission (37%); leveraged member strengths (10%); and established and kept rules and standards (18%). The sub-categories in the major categories are:

Group A: Democratic Participation - 34
1. Everyone participated fairly - 20
2. All were always present
3. Regular contact - 7
4. Constructive criticisms led to positive outcomes - 5
5. No one tried to dominate the group

Group B: Communication - 21
6. Brainstormed all questions and answers
7. Communicated well - 18
8. Kept everyone in the loop – 2

Group C: Collaboration/Commitment to Mission - 53
9. Collectively perfected the writing craft - 10
10. Revisions to the paper came together at the end - 4
11. Supported/committed to each other and helped when a member fell behind - 9
12. Accommodated each other - 2
13. Worked well together - 21
14. All had a genuine interest in the topic
15. We were all committed - 4
16. Had fun - 2

Group D: Leveraged Member strengths - 16
17. Understood each other's strength & weaknesses - 6
18. Respectful of each other's skills - 6
19. Leveraged our unique personalities well - 3
20. Shared knowledge and experience

Group E: Established/Kept Rules and Standards - 28
21. Set priorities, responsibilities, and deadlines quickly - 12
22. Kept to deadlines - 14
23. Follow up - 2

Narratives in the thematic categories mentioned previously aligned with immediate value, potential value/knowledge capital, applied value/practice changes, realized value/performance improvement value creation cycles of the value creation framework and the following five TLH desired outcomes: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student engagement in initiating or contributing to content or other learning activities; 4. Increased use of problem-solving skills; 5. Improved performance evidenced by quality of individual versus group products.

What Could Your Group Have Done Better?

Seven thematic categories developed from 89 responses included establishing and keeping rules and standards (18%); democratic participation (2%); project topic choice (2%); commitment and preparation (30%); communication (13%); coordination and organization (30%); and a miscellaneous group that did not fall into

any of the six thematic categories (3%). The sub-categories in the major thematic categories are:

Group A: Establishing and keeping Rules and Standards - 17
1. Better attendance
2. Could follow directions better—could have followed the rubric - 6
3. Stay with predetermined plan - 3
4. Could have stuck to our meeting times
5. Procrastination presented great challenges to completion and quality of our work - 4
6. Finished tasks on time but our plan was to complete task before due date
7. Better role clarification

Group B: Democratic Participation - 2
8. Group was dominated by leader
9. We did not have equal say in the decisions

Group C: Project Topic Choice - 2
10. Choose a topic or system to which we had information; it was difficult to get information
11. Could have selected a system known to all for analysis rather than rely on just one person for system information

Group D: Commitment and Preparation - 28
12. Could be more prepared before in-class team activities-read chapters - 4
13. Could have done more research on our project topic - 5
14. Could discuss questions a little longer
15. More face to face/live interactions - 17
16. Could have reviewed our work more thoroughly

Group E: Communication - 12
17. Maintain a single channel of communication
18. More group communication with instructor rather than just one person communicating with instructor - 3
19. Better intra-group communication/clarity and succinct - 7
20. Slow responses to emails, texts, and required deliverables

Group F: Coordination and Organization - 28
21. Better coordination of schedules - 2
22. Could have incorporated group members answers better - 3
23. More flexibility could have helped
24. Adopt process to mesh writing styles - 2
25. Be more organized - 3
26. Structure member contributions to paper to avoid rework - 3
27. Clarity of group direction early in the process - 7
28. We could have better addressed the challenge of limited class time for project - 4
29. Could have created outlines to facilitate the completion of the papers
30. Could have given ourselves more time to complete assignments
31. Could have better time management

Group G: Miscellaneous - 3
32. No being sick
33. Could have brought snacks to share and relax
34. We did everything very well - 6

Narratives in the these thematic categories aligned with immediate, potential, applied, and realized value creation cycles of the value creation framework and the following six TLH desired outcomes: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student engagement in initiating or contributing to content or other learning activities; 4. Higher student enthusiasm; 5. Increased use of problem-solving skills; 6. Improved performance evidenced by quality of individual versus group products.

What Additional Support Could Your Instructor Have Given the Team Process or Groups?

Narratives of experienced and desired instructor support were organized into five thematic categories emerging from 108 participant narratives of celebrated and desired instructor's support, including productive resource and support (37%); communication (19%); organization and coordination (18%); preparation and lecture (7%); and a general category that exuded the instructor's impact on team process and outcomes (19%). The sub-categories in the major thematic categories are:

Group A: Productive Resource and Support - 40
1. Instructor was very helpful by providing examples for the project
2. Provide some examples of Power Point
3. Though specifics on expectations were abundant, we could have had more examples of projects
4. Provide weekly resources in advance—post them early
5. We should require limited instructor support as adult learners
6. The instructor gave us a lot of support
7. Provided constructive criticisms to make our project better
8. Gave us a lot of time to meet in class
9. He helped us joyfully
10. More time to work on group term project in class - 6

11. Could have provided examples of project outcomes sooner - 7
12. Instructor helped our troubled team all along the way
13. Guidance for new class members
14. The instructor gave adequate class time for individual and group work
15. Very supportive - 20
16. A full week to complete written assignment

Group B: Communication - 21
17. Instructor set expectations for each section of the paper
18. Consistency in expectations
19. Clarity and specifics in instructor's expectations of the team - 10
20. Explain the grading rubric at the beginning of the class—could save some revisions
21. Address team norms and expectations first day of class and revisit mid-way into the class
22. I could not ask more from this instructor—everything was so well organized with specific expectation instructions - 4
23. Could emphasize individual responsibility to the team
24. Should have given team performance feedback to the entire team rather than to the group leader only
25. More regular feedback prior to completion of project - 4

Group C: Organization and Coordination - 12
26. Course was divided into different parts nicely
27. Could be more flexible with group size, the group seems forced
28. We needed guidance and structure - 3
29. Compressed semester did not work well for team projects - 2
30. We benefited from instructor's facilitation of team interactions
31. Post all assignments and release to students at the beginning of semester
32. Should have given groups more time to know each other
33. Should solve group problems as a group instead of talking to group members individually
34. One week in advance to set group rules for a compressed class

Group D: Preparation and Lecture - 8
35. Give us more time to form as a group before selecting topic
36. Training on team process at the beginning of the class - 4
37. Weekly assignments prepared us for the in-class team discussion
38. Instructor did not understand the uniqueness of our project
39. The lecture portion of the class was very informative about the healthcare industry as a whole and what to expect as healthcare leaders in the workforce

Group E: General - 21
40. This experience has been beneficial
41. None - 10
42. We had a better understanding of group dynamics after the team projects

Narratives in thematic categories related to instructor support aligned with potential/knowledge capital, applied/practice changes, and realized/performance improvement value creation cycles and the following five desired TLH outcomes: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student enthusiasm; 4. Increased use of problem-solving skills; and 5. Improved performance evidenced by quality of individual versus group products.

Discussion

A value creation conceptual framework (Wenger et al., 2011) was used to analyze social capital and value creation in a TLH instructional design (Tataw, 2014). The findings suggest a relationship between social capital and performance. The results also appear to validate the explanatory strength of the value creation framework in relation to social capital as a value creator and as value created in learning communities. The value created from social capital dynamics in the learning community aligns with the anticipated outcomes of TLH.

From Social Capital Formation to Performance Improvement

Participant narratives related to the four stages of team development and the three open-ended topics, chart a roadmap of increasing social capital development that tracts from the team formation to performance improvement even as we see positive and negative inputs toward the buildup into performance improvement. When social capital was accumulated, performance was advanced and vice versa. Social capital began accumulating in the forming stage of team development as evidenced in factors described in the *social process of team formation* thematic category. Reflections on the storming stage revealed the magnitude of social capital as positive experiences indicated in the following thematic categories*: easily resolved conflict resolution;*

communication; cohesiveness; collaboration; and emerging norm. There were also performance failures in team activities such as conflict resolution when no social capital was accumulated as described in the *conflict was not overcome* thematic category. At the norming stage, emphasis on the creation of social capital at this stage of team development was evidenced in the following thematic categories: *set rules and standards; and applied rules and standards*. The major themes in the first three stages were clearly revealed as inputs into ultimate team performance in the performing stage of team development where accumulated social capital was evidenced in the *good performance* thematic category, and social capital deficit was evidenced in the items summarized in the *poor performance* thematic category.

Responses, to three open-ended questions on performance and instructor support, also showed a pattern of social capital creation advancing individual and group performance, particularly when the instructor is active in the team. Reflecting on what they did well, learning community members' narratives pointed to social capital elements which paved the way for team performance outcomes results seen in a 'perfected writing craft,' and summarized under five major thematic categories including: *democratic participation; communication; collaboration and commitment to missions; leveraged members strength; and established and kept rules and standards.* Conversely, when participants commented on what they could have done better as a learning community, they pointed to deficits in social capital illuminated in the following thematic categories: *establishing and keeping rules and standards; democratic participation; project topic choice; commitment and preparation, communication; coordination and organization.* Deficits were barriers to project quality or on time completion, thereby negatively impacting social capital development and diminishing realized value creation. On the other hand, in their narratives on instructor support, members celebrated and desired an active instructor who injected social capital into the group as an external source of tangible and intangible resource for the micro learning community of in-class permanent teams. This is captured in the following thematic categories: *productive resource and support; communication; organization and coordination; preparation and lectures.* Team members saw the instructor as a contributor who creates the conditions for social capital to take hold and/or taps into the learning community's social capital to create potential, applied, and realized value. They also saw and desired an instructor who conditioned the context and dynamism for productive relationships by being 'very supportive' and helping them 'joyfully'.

The social capital that created the "magical glue" was developed at different stages of team development including forming, storming, norming, and performing. The social dynamic culminated in successes realized in the performing stage of team development which is exemplified by a "perfected writing craft." The findings of a suggestive association of social capital and performance are consistent with the conclusions of other scholars who determined that the "social glue" known as "social capital" (Coleman, 1988; Affanas'ev et. al, 2017) which stimulates members of network communities to achieve specific aims (Almuqrin et al., 2020) is inherent in learning communities, and advances individual and collective performance outcomes (Yao et al., 2015; Vaughan et. al., 2015; Craig et al., 2016; Dingyloudi et al., 2019; Venter, 2019; Kent et al., 2019). In addition, consistent with explanations of the multidimensions of social capital from prior scholarship (Nahapiet & Ghoshal, 1998; McFadyen & Cannella, 2004; Roxas, 2008) including structural, relational, and cognitive levels; the four stages of team development started with structural dimensions in the formation stage, and matured into relational and cognitive dimensions as we moved through storming, norming, to the performing stage of team development. Finally, bridging and bonding (Affanas'ev et. al, 2017) occurred in order to move each team through the four team formation stages: forming, storming, norming, and performing.

Value Creation Framework Validation

The data appears to validate the value creation framework (Wenger et al., 2011). The framework guided the measuring and explaining of social capital in the micro and mezzo learning communities around in-class permanent teams within the TLH instructional design. Categorized empirical data matched the constructs in the conceptual framework adopted for the study and data patterns aligned with the relationships articulated in the value creation framework. Consistent with the value creation framework, thematic categories coded from participant narratives on the four team development stages and responses to the three open questions align and intersect in varying degrees, with four of the five value creation cycles including immediate value, potential value, applied value, and realized value (Wenger et al., 2011).

Empirical data in the forming stage of team development aligned with immediate value and potential value cycles of the value creation framework. Narratives in the team formation rationale thematic category such as factors that contributed to team formation and interactions as well as desires not met in the basic activities of team formation were predicted in the immediate values cycle. Narratives in the *social process of team formation* thematic category encompassing the social capital that accrued from coming together or the group being challenged, were predicted in elements of

the potential value cycle, including the creation of social capital and transformed ability to learn.

Categorized data in storming stage of team development aligns with both immediate value and potential value cycles of the value creation framework. Structural factors related to the team formation thematic category properties were predicted in elements of the immediate value cycle. These included team reshuffle and conflicting schedules, which undermined the ability to function as team or to create the social capital needed for a team to advance; just as strong underlying favorable conditions overcame structural conflicts to advance the team objectives. Also, narratives from five major thematic categories encompassing *ease in conflict resolution, failure to resolve conflict, communication, cohesiveness/collaboration, and emerging norms* were predicted in the potential value cycle elements including knowledge capital, social capital, human capital, and learning capital. *Ease in or failure to resolve conflict, communication strengths, cohesiveness, and collaboration as well as norms* provided evidence of social capital. *Cohesiveness/collaboration* category had sub-themes that showed both human capital and learning capital gained by harnessing internal assets.

Categorized data from the norming stage of team development aligns with immediate value, potential value, and applied value cycles of the value creation framework. The creation and application of rules and standards is consistent with elements in potential and applied value cycles such as knowledge capital which is applied to benefit members individually and collectively. The narratives also point to the importance of structure as an immediate value whose presence or absence seems to affect applied value creation in some themes.

Responses on the Performing stage of team development are consistent with constructs in potential value, applied value, and realized value cycles of the value creation framework.

Many statements referred to potential value as a factor in good performance including social capital (clear roles and rules, mutual respect, etc.) and learning capital when members learned from each other to advance group performance. As predicted in applied and realized value cycles, the absence or presence of applied norms and good conflict resolution habits were identified as barriers to good performance or were celebrated as contributors to good performance. Value created or not created in the immediate, potential, or applied value creation cycles is perceived to have affected performance or realized value.

Categorized data of participant reflections on what team members did well aligns with elements in the four cycles of the value creation framework including immediate value, potential value, applied value, and realized value. As predicted in the immediate value cycle, members in their collaborative spirit, reported having fun, celebrating the act of coming together as a learning community. Potential value cycle elements are predicted in democratic participation which exhibited a horizontal participatory culture, communication, established norms, and collaborative spirit which constitute both social capital and intangible resources. The same is true of leveraged individual strengths which were human capital that was transformed into learning capital. In addition, collaborative behavior such as enforcement and respect of norms applied in team practice aligned with applied value cycle elements. Finally, all value identified in the reflections of what was done well, culminated in a "Perfected writing craft" as a realized value.

On the other the other hand, in reflecting on what could have been done better, participants pointed to deficits in value elements in four cycles of the value creation framework including immediate, potential, applied, and realized value cycles**.** Immediate value was lacking in one statement which lamented the lack of snacks to share and cheer up the team members. Failure to establish rules and standards, democratic participation, and communication created deficits in social capital and network resources which undermined knowledge capital and potential value creation which are important elements of potential value. Further, failure to apply rules and standards was a missed opportunity to create applied value**.** Al in all, failures in creating potential and applied value affected the ability to achieve performance improvement or realized value such as not completing the project on time or not meeting established project deadlines.

Reflection on instructor support of the team process or groups aligned with elements in potential, applied, and realized value cycles. Potential value cycle elements were obvious in the portrayal of the instructor as a tangible and intangible resource which influenced communication, organization and coordination; and as the builder of human capital through preparation and lectures which were relevant in the knowledge capital box of the potential value creation cycle. Also, the portrayed role of the instructor as an active ingredient in advancing team practice or negatively affecting it, aligned with applied value cycle elements. The instructor's contributions seen in all four thematic categories are portrayed as an active driver of progress from potential value creation to performance improvement.

Though, a bird's eye view of the results on value creation, showed an overall sequence from one value creation cycle to another, there was not always a predictable break or continuation from one cycle to the other. Social capital elements in one value creation cycle can be found in another cycle performing a different role in the social capital chain and could influence the next cycle. For instance, member interactions and enthusiasm

could be found in immediate, potential, and applied value creation cycles. In addition, though certain social construct elements were concentrated or only existed in a particular team formation stage or value creation cycle, other elements straddled more than one team stage or occurred in one value creation cycle but were relevant in the following team development stages or value creation cycles. Norms were established or enforced in the potential and applied value cycles while product perfection elements were dominant in the realized value cycle. Also, the instructor as a value creator, external to micro learning communities, impacted social capital accumulation and performance outcomes in potential, applied, and realized value creation cycles.

The manifestations of, and relationships between, social capital and value creations in this study are consistent with prior scholarship, where value creation is shown to have occurred at macro, mezzo, and micro levels of social interactions (Affanas'ev et al., 2017), and could be external or internal to a learning structure (Yoon & Hyun, 2010; Chung & Yoon, 2015). More recent studies utilizing the value creation framework as the conceptual framework, link social capital to immediate value creation during the early stage of a learning community's formation and the evolution of created immediate value to new activities and interactions associated with potential value, applied value, and realized value (Heemskerk et al., 2021; Mavri et al., 2021)

Achievement of TLH Outcomes

The thematic categories from responses in each team development phase and the three open-ended questions aligned with value creation cycles, and with the six TLH desired outcomes, in varying degrees. Participants in the team-lecture hybrid program are expected to demonstrate the following: 1. Increased use of critical thinking; 2. Higher student interaction with other students and the instructor; 3. Higher student engagement in initiating or contributing to content or other learning activities; 4. Higher student enthusiasm; 5. Increased use of problem-solving skills; and 6. Improved performance evidenced by quality of individual versus group products (Tataw, 2014).

TLH outcomes were achieved in all phases of team development. In the *forming* phase of team development, factors in major thematic categories contributed to immediate and potential value and aligned with two TLH outcomes. Higher interactions with other students were evidenced in the team formation rationale thematic category as immediate value was created; and higher student enthusiasm was obvious in both team formation rationale and social process formation thematic categories which contributed to immediate and potential value. In the storming phase of team development, factors in five thematic categories contributed to immediate and potential value cycles and aligned with five desired TLH outcomes as follows: critical thinking which threaded through all thematic categories; higher student interaction with other students was evidenced in communication and collaboration thematic categories; higher student engagement in initiating or contributing to content or other learning activities was observed in communication, collaboration, and conflict resolution thematic categories; higher enthusiasm was observed in collaboration and communication thematic categories; and increased problem-solving skills were seen in conflict resolution and emerging norms thematic categories.

In the *norming* phase of team development, factors in both set rules and standards and applied rules and standards thematic categories contributed to immediate, potential, and applied value cycles. The factors also aligned with two desired TLH outcomes as follows: increased use of critical thinking threaded through both thematic categories evidenced in structured components which created immediate value and gave birth to potential and applied value; and increased use of problem-solving skills seen in creation and application of norms which affected all categories of knowledge capital.

In the *performing* stage of team development, factors in two major thematic categories of good performance and poor performance contributed to potential, applied, and realized value cycles and aligned to two TLH desired outcomes as follows: increased use of critical thinking threaded through all good performance and poor performance thematic categories yielding potential, applied, and realized value; and improved student performance observed in the quality of individual versus group products was seen in good performance and poor performance thematic categories and contributed to applied and realized value cycles.

Responses to all three open-ended questions (including what teams did well, what they could do better, and instructor support) revealed varying levels of TLH outcomes achievements. Narratives of *what the group did well* organized in five thematic categories including democratic participation, communication, collaboration and commitment, leveraging of member strengths and rules and standards contributed to immediate, potential, applied, and realized value cycles. These aligned with five TLH desired outcomes as follows: increased use of critical thinking was seen in all five thematic categories and contributed to potential value; higher interactions with other students was also observed in all five thematic categories and contributed to potential value; higher student engagement in initiating or contributing to content or other learning activities was seen in democratic participation, communication and collaboration, and contributed to

potential and applied value; increased use of problem-solving skills was observed in the establishment and maintenance of rules and standards and contributed to both potential and applied value; and improved performance was evidenced by quality of individual versus group products seen through all five thematic categories which contributed to realized value.

Also, responses to *what teams could do better* had factors in seven thematic categories including rules and standards, democratic participation, project topic choice, commitment and preparation, communication, and coordination and organization. If done well, these factors would have contributed to immediate value, potential value, applied value, and realized value. Their absence or limited presence undermined the achievement of all six desired TLH outcomes.

Further, reflections on *experienced and desired instructor support* are organized in five thematic categories including productive resources, communication, organization, and coordination, which contributed potential, applied, and realized value and showed that the instructor contributed to the following five desired outcomes of the TLH: increased use of critical thinking, higher interactions with other students and instructor; higher enthusiasm; increased use of problem-solving skills; an improved performance evidenced by quality of individual versus group productivity.

The links established between social capital and TLH outcomes in this study, are consistent with a variety of other studies which suggest links between social capital and student learning outcomes in Team Based Learning (TBL) environments. Examples include the following: higher-level cognitive and collaborative skills, and supportive environment (Michaelson et al., 1993; Haidet et al. 2002); improved positive student attitudes and motivation (McInerney & Fink, 2003; Gomez et al., 2010); learner-focused communication (Matveeve & Milterb, 2010); critical, innovative, and analytical skills (Matveeve & Milterb, 2010; Almuqrin et al., 2020); higher levels of student engagement (Dana, 2007); and overall improved academic performance and better relationships in the learning community (Bilgin & Geban, 2006; Brouwer et al., 2016; Venter, 2019; Cremerius et al., 2021).

Study Limitations

The main limitation to the findings of this study is the reliance on self-reporting in the data collection which always comes with subjectivity. However, this weakness is mitigated both by the diversity of the contexts in which social interaction took place, and the diversity of participants who reported their experiences and aspirations. The findings are further strengthened by the data saturation and theory validation at a sample size that confirms content validity.

Conclusion

This study used four value creation cycles of a value creation framework (Wenger, et al., 2011) to analyze the role of social capital in experienced and aspired value among members of a learning communities. The conceptual framework is aligned to four stages of team development, including forming, storming, norming, and performing in order to illuminate value creation experiences and aspirations of participants in in-class permanent teams of a TLH instructional design as they moved from one stage of team development to another, and as they interacted with other students and the instructor in the micro and mezzo environments to "perfect their craft." The findings show the study teams achieving all six desired TLH outcomes. The findings also demonstrate that social capital is both inherent and created in learning communities of the evaluated in-class permanent teams and that social capital contributes to both individual and collective objectives of learning communities.

In addition, findings appear to support the TLH design theory hypothesizing improved performance when we combine active learners and an active instructor in the same learning community. Created value accrued to individual team members and to the team as a whole. Sometimes the value created was social capital, sometimes social capital led to additional value creation represented by improved individual and team performances seen in immediate value, potential value/knowledge capital, applied value or realized value/performance improvement.

The consequences of social interactions in learning communities could be desirable or negative, but they tell the story of expectations and success factors for team members in an in-class permanent learning community. The created or aspired value revealed in the narratives of learners taking part in micro or mezzo domains of interactions, also represent attributes that should be developed and nurtured in learning communities of active learners and active instructors. The recommendation is for these attributes to be given significant consideration when designing objectives, activities, structures, and cultures in learning communities.

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