Social Constructivism and Clinical Teaching in a Selected Higher Education Institution in Cavite, Philippines

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Abstract – *For the past years in the Philippines, health sciences have been guided by the Competency-Based curriculum that primarily champions the behavioral and cognitive aspects of learning through massive reading of voluminous materials, the familiarization, memorization, and understanding of concepts, and the honing of skills through repetitions as promoted by demonstrations and return demonstrations. Just recently, Outcomes-Based Education (OBE) was introduced with the focus on outcomes of students. This advocates learner-centeredness, which is a major component of Vygotsky's Social Constructivism theory. This paper aims to formulate a model of social constructivism in clinical teaching by first assessing to what extent social constructivism has been practiced in clinical teaching and education. With the 358 student-participants recruited and selected through cluster sampling and the use of a descriptive and comparative design, the following conclusions emerged: participants believed that social constructivism is occasionally useful in clinical teaching; the application of social constructivism is not uniform and consistent with all disciplines and programs, practices of social constructivism in clinical teaching are highly observed by students because these manifest in educational environment, and the practice or application of social constructivism in clinical teaching promotes positive perceptions about its usefulness in that area. Students may appreciate social constructivism better if teachers maximized its use in clinical teaching.*

Keywords – *Clinical teaching, cooperative learning, learner-centeredness, scaffolding, social constructivism, social interaction.*

Introduction

Clinical teaching is a complex area of education. There are few researches in this field. DeYoung (2009) commented that little of the present clinical teaching is grounded in research, but rather is grounded in tradition, common sense, and feasibility. DeYoung continued by saying, "We don't really know, for example, how many hours of clinical experience are needed for undergraduate nursing education, for graduate education, for orientation of new staff nurses, or for teaching ancillary staff." There is scarcity of empirical evidence of which model of clinical education yields the best results. DeYoung asserted that it is the complexity of the clinical setting that makes research so difficult. There are so many variables that are difficult to control: "the severity of patient illness, widely varying settings, differences in nursing and educational personnel, variable staffing patterns, and varied student motivation and preparation, to name a few" (p.237). However, she added that it is the same complexity that makes the clinical setting such a rich learning environment.[1]

Philippine health sciences education is basically anchored on a competency-based curriculum that primarily champions the behavioral and cognitive aspects of learning through massive reading of voluminous materials, the familiarization, memorization, and understanding of concepts, and the honing of skills through repetition as promoted by demonstrations and return demonstrations. Juxtaposing social constructivism and Philippine health sciences education, one could readily

discover the supposed irreconcilable differences of the two. The author utilized this theory in one of his classes. He was expecting a very low performance rating because there was a sudden shift of instruction. However, he was wrong because his students liked it and even affirmed how they learned so much from what he did. This motivated the author to do a seminal and in-depth study about social constructivism through this research. Explicitly, the purpose of this research is to formulate a contextual framework of social constructivism in clinical teaching.

This study aimed at exploring and examining clinical teaching in Philippine health sciences education vis-a-vis social constructivism. Consequently, to what extent is the practice of social constructivism in clinical teaching, as to: (1) Scaffolding, (2) Social interaction and cultural setting, (3) Cooperative learning, and (4) Learner-centered learning. Furthermore, is there a significant difference on the extent of practice and level of usefulness of social constructivism in clinical teaching when grouped according to profile variables? These are the questions that this study addressed.

Constructivism

Broadly speaking, constructivism refers to the view that "knowledge is constructed by individuals through the use of language and other symbolic and cultural systems."[2] Olssen (1996) emphasized the major influences of constructivism on present day education. He mentioned that the central tenet of constructivism "can be defined in terms of the proposition that knowledge does exist independently of the subjects who seek it, and in this sense it constitutes a human construction recognizing the active capacity of the cognising subject"[3]

Active Construction of Knowledge

Constructivism emphasizes active construction of knowledge by the students.[4] Historically, this argument was a reaction to empiricism and the many forms of behaviorist psychology of the 1920s and 1930s. It was a "healthy antidote" to those various forms of "grey materialism", including the focus on interpretative structures of science, the theory dependence of observation, and the efficacy of the mind in the active quest for knowledge.[3] Basically those claiming to be "radical", "social", "sociohistorical", "pragmatic", "Piagetian", can be traced back to the constructivist movement.[3]

This active construction of knowledge is a process. For Good and Brophy (1994), this construction process involves "making connections between new information and prior knowledge."[4] Poplin (1988) specifically asserted that this construction of new knowledge comes about through the processes of transformation and self-regulation. Transformation of knowledge occurs when students learn new knowledge or new experiences, and their prior knowledge is then transformed into new knowledge. This construction of new knowledge occurs when students assimilate the new knowledge and not simply add the new information.[5]

Contemporary Form of Constructivism

Constructivism was a movement that has its origins in developmental psychology, particularly in the work of Jean Piaget and with its modern interpretation and expression in the radical constructivism of von Glasersfeld and others (Olssen, 1996). Radical constructivism believed that all understanding and communication is the interpretation of the experiencing subject. It rejected "metaphysical realism" that views knowledge of the world outside the knowing mind. Putman (1981) advocated this view which was the main contention in epistemology, long

before the Kantian philosophy and after the pre-Socratic philosophy. Radical constructivism involved a conviction that truth was always connected to notions of "objective validity" and claimed that "something is true only if it corresponds to an independent objective reality."[3]

Cognitive Constructivism

Cognitive constructivism describes the cognitive processes involved in knowledge construction. These were the theories that adhere to a system of explanations of how learners, as individuals, impose intellectual structure on their worlds.[6] Piaget (1985) defined it as a system of explanations of how learners, as individuals, adapt and refine knowledge.[7] Windschitl (2002) posited that in cognitive constructivism, "learners actively restructure knowledge in highly individual ways, basing fluid intellectual configurations on existing knowledge, formal instructional experiences, and a host of other influences that mediate understanding" (p. 140). It asserts that meaningful learning is rooted in and indexed by personal experience[8] and that learners maintain ideas that seem intuitively reasonable to them.[6]

Social Constructivism

The theory of social constructivism addresses the social nature of learning and comprehending, which includes the importance of meaningfulness for learning.[4] It focuses less on the behavioral and cognitive aspects of learning. Lev Vygotsky, the founding father of social constructivism, believed in social interaction and that it was an integral part of learning.[9] As he put it, "learning is a social process in which learners interact with others in their environment to learn concepts and skills and gradually internalize them."[4]

Further, in this type of constructivism, it is argued that knowledge is a cultural product[6]. Furthermore, Vygotsky's work is based on two key ideas. First, he proposed that the understanding of intellectual development lies within the understanding of the historical and cultural contexts a child is into. Secondly, he argued that development heavily depends on the sign systems that individuals grow up with. These systems refer to the symbols that cultures create to help people think, communicate, and solve problems. These symbols are languages, writing systems, and counting systems. In contrast to Piaget, Vygotsky asserted that development is strongly linked to input from others. However, he shared the same idea with Piaget that signs and symbols are developed in sequence which is common to all growing and learning children. [11] Development to Vygotsky is preceded by learning, and learning involves the acquisition of signs by means of instruction and information from others.

Looking both at cognitive constructivism, as espoused by Piaget, and social constructivism, as espoused by Vygotsky, one can conclude that they are not that far from each other. Vygotsky himself admitted that his disagreement with Piaget's theory centers only on one point, but an important point. For Piaget, development and instruction are two separate entities. The cognitive ability of a growing child could develop sans instruction and that "the function of instruction is merely to introduce adult ways of thinking that conflicts the child's own and eventually supplant them." [10] Vygotsky continued, saying, "Studying a child['s] thought apart from the influence of instruction[...] excludes a very important source of change and bars the researcher from posing the question of the interaction of development and instruction peculiar to each age level. Our own approach focuses on this interaction" (p.117).

All of Vygotsky's research and theories are collectively involved with social constructivism such as zone of proximal development, cognitive apprenticeship, social interaction, culture, and inner speech.[9]

Zone of Proximal Development

The Zone of Proximal Development (ZPD) has been described as a zone where learning occurs when a child is helped in learning a concept in the classroom.[9] Vygotsky's theory implies that "cognitive development and the ability to use thought to control our own actions require first mastering cultural communication systems and then learning to use these systems to regulate our own thought processes."[11] Vygotsky emphasized the sociocultural nature of learning[10] (Karpov and Haywood, 1998; Slavin, 2006). Vygotsky believed that learning takes place when children are working within this so-called zone of proximal development.[10] With this concept that underscores assisting a child in learning, many theorists and educators have proven that Vygotsky's theory works. Powell and Kalina asserted that children learn easiest inside this zone when others are involved. Slavin (2006) added by underscoring that the tasks within the zone of proximal development are ones that a child cannot yet do alone but could do with the assistance of more competent peers or adults. An example of this is when students have an assignment and the teachers assist them. Once students achieve the goal of the initial activity, their zone grows and the students can do no more. Students act first on what they can do on their own and then, with assistance from the teacher, they learn the new concept based on what they were doing individually.

Social Interaction and Cultural Setting

Social interaction and cultural influence greatly the students and how they learn. Therefore, the teachers should always recognize and respect the diversity of the class. This diversity in the class is more than the ethnic backgrounds of the students. Aside from ethnicity, diversity could also be in the form of identity and biological differences that offer varied experiences and understanding to each student[13]

Powell and Kalina asserted that before the students learn the curriculum in school, they first need to understand themselves and others around them. Furthermore, teachers should allow students to talk about themselves, as well as they talk about the subject matter of the day. Teachers should ensure that students could critically think through the promotion of the dialogue of the material in the class. If the students think critically, they will go out of the classroom with a personal meaning that was constructed on their own. Accordingly, "[t]he idea of discussion is echoed throughout social constructivism and is enriched through diversity."[9]

Scaffolding

Related to the ZPD is the concept of Scaffolding. Scaffolding is a key idea derived from Vygotsky's notion of social learning.[11] This refers to the assistance provided by more competent peer or adults. Slavin (2006) citing Rosenshine and Meister (1992) noted that scaffolding is the provision of support to a growing child during one's early stages of learning before support is diminished and the child has to take on increasing responsibility as soon as he/she is able. Powell and Kalina (2009) termed this as an "assisted learning process" that supports the ZPD. A good example of this is when parents teach their children to play a new game or how to tie their shoelaces.

Likewise, when a child learns to count objects alone, he or she may miss a number; however, if a teacher holds their finger and points directly to the object with them, counting out loud together, the child can then do the counting correctly by themselves. There is a unique type of internalization that will occur for each student. This happens when a student is asked to perform a task that has some meaning to the student and, with assistance, will complete it. The task is difficult for the student to perform but there is a support system which is available for the student to ultimately solve the problem.[9]

Cooperative Learning

According to Vygotsky, cooperative learning is an integral part of creating a deeper understanding. It is part of creating a social constructivist classroom because in this type of learning, students do not only work with teachers one-on-one, but also with other students. Students work together to help one another learn.[9][11] All of the learners are within the ZPD, therefore, they provide models of slightly more advanced thinking for each other.

Vygotsky (1978) himself recognized the significance of interaction with peers in motivating the students to think. He explicitly believed that "internalization occurs more effectively when there is social interaction". Woolfolk, 2004, put it by saying, "A common question about knowledge is whether it is constructed internally, depending on a situation in a point of time or generally and some theorists claim that social constructivism and situated learning confirm Vygotsky's notion that learning is inherently social and embedded in a particular cultural setting." In this cultural setting, teachers can create work experiences for students and collaborate with each other to construct cognitive or individual internalization of knowledge[9].

Cognitive Apprenticeship

Cognitive apprenticeship is a derivation of Vygotsky's arguments regarding the social nature of learning and the ZPD.[11] This refers to the process that each learner must go through as one gradually acquires expertise through interaction with an expert, which can either be an adult or an older or more advanced peer. Basically, student teaching is a form of apprenticeship. Teachers transfer this effective model of teaching and learning every day to their students when one engages them in more complex, learner-centered tasks[14][11] since more advanced students help the struggling students.

Communication in Social Constructivism

The concepts discussed above such as the ZPD, scaffolding, social interaction, cultural setting, cooperative learning, and cognitive apprenticeship are woven together by the concept of communication. Communication is the key, and for it to be most effective all participants must be on the same common ground, which is referred to as the ZPD. Communication, aside from the context, needs the language, which is considered as the most important aspect in a social constructivist setting.[10] Without language, learning, knowledge or thinking will never take place. Kozulin (1990) quoting Vygotsky put it, "it is incorrect to consider language as a correlative of thought; language is a correlative of consciousness. The mode of language correlative to consciousness is meanings. The work of consciousness with meanings leads to the generation of sense, and in the process consciousness acquires a sensible (meaningful) structure."[9]

Methodology

This research utilized the descriptive design, in which a validated and tested researcher-made questionnaire (a=.921) was used for the 358 participants to accomplish. The study used cluster sampling, a type of non-probability sampling in which the population that was composed of health science professions teachers and students were chosen.

Results and Discussion

The retrieval rate of this research is 85%. Further, Table 1 (see Table 1 below) shows that 57% of the participants are female. The ages of these participants mainly range from 19 years old and below (64.5%), while those who belong to the 20-24 year-old age bracket account for 32.1% of the respondents. Moreover, most of them come from the Medical Laboratory Science program that accounts for 24.3% of the entire sample for this study. Meanwhile, 62% of the participants consider themselves as good (81.25%-87.49%) when it comes to academic performance in their previous year of study.

Table 1. Summary of Demographic Profile and Academic Performance (n=358)

Demographs	Frequency	Percentage
Gender		
Male	154	43
Female	204	57
Age		
19 and below	231	64.5
20-24	115	32.1
25-29	4	1.1
30-34	4	1.1
35-39	3	0.9
40-44	1	0.3
45-49	0	0
50-54	0	0
55 and above	0	0
Discipline		
Nursing	80	22.3
Pharmacy	68	19
Physical Therapy	54	15.1
RT	63	17.6
Medtech	87	24.3
Biology / Predentistry	6	1.7
Academic Performance		
Poor (Below 75)	35	9.8
Fair (75-80.24)	65	18.2

Good (81.25-87.49)	222	62
Very Good (87.50-93.74)	33	9.2
Excellent (93.75-100)	3	0.8

On the extent of practice of social constructivism in clinical teaching, as to:

Scaffolding. The overall result (see Table 2.1 below) shows that scaffolding is occasionally observed in clinical teaching (x=2.95, SD=.61). Table 2.1 further exhibits that students are asked to perform a task that has some meaning to the student and with assistance from the teachers (x=2.99, SD=.85); teachers allow students to learn from other more knowledgeable, skillful, competent and more advanced peers until they reach a certain level of understanding and skills (x=2.98, SD=.82); teachers do something to assist students to learn new concepts, principles, and skills in a subject (x=2.93, SD=.82); and teachers gradually withdraw assistance when the student shows certain knowledge and capability or skills in a subject matter (x=2.90, SD=.79).

Table 2.1 Extent of Observed Scaffolding

Indicators	Mean	SD	Verbal Interpretation
1.Teachers do something to assist students to learn new concepts, principles and skills in a subject.	2.93	.82	Occasionally observed
2.Teachers gradually withdraw assistance when the student shows certain knowledge and capability or skills in a subject matter.	2.90	.79	Occasionally observed
3. Teachers allow students to learn from other more knowledgeable, skillful, and competent and more advanced peers until they reach a certain level of understanding and skills.	2.98	.82	Occasionally observed
4. Students are asked to perform a task that has some meaning to the student and with assistance from the teachers.	2.99	.85	Occasionally observed
Overall	**2.95**	**.61**	**Occasionally observed**

Social Interaction and cultural setting. It can be gleaned from the results (see Table 2.2) that overall, social interaction and cultural setting is occasionally observed (x=2.94, SD=.63). This implies that teachers do not only recognize cultural diversity (x=2.86, SD=.84) but also respect it (x=2.98, SD=.77); they allow students to talk about themselves as they talk about the subject matter of the day (x=2.96, SD=.83) and ensure that students critically think through the promotion of discussion and dialogue in the class (x=2.96, SD=.80).

Table 2.2. Extent of Observed Social Interaction and cultural setting

Indicators	Mean	SD	Verbal Interpretation
1. Teachers recognize the cultural diversity of the class specifically ethnicity,	2.86	.84	Occasionally observed
2. Teachers respect cultural diversity of the class particularly ethnicity.	2.98	.77	Occasionally observed
3. Teachers allow students to talk about themselves as well as they talk about the subject matter of the day.	2.96	.83	Occasionally observed
4. Teachers ensure that students critically think through the promotion of the discussion and dialogue in the class.	2.96	.80	Occasionally observed
Overall	2.94	.63	Occasionally observed

Cooperative Learning. Results also (see Table 2.3) suggests that cooperative learning can also be observed occasionally (x=2.99, SD=.70). This implies that in the class, teachers allow students to work with other students in achieving objectives as teachers devise plans for the students to interact with each other about what they think.

Table 2.3 Extent of Observed Cooperative Learning

Indicators	Mean	SD	Verbal Interpretation
1. Teachers devise plans for the students to interact with each other with what they think.	2.99	.79	Occasionally observed
2. In the class, teachers allow students to work with other students in achieving a particular objective.	3	.85	Occasionally observed
Overall	2.99	.70	Occasionally observed

Learner-centered learning. The institution supports learner-centeredness, as shown by the overall mean of 2.99 out of possible 4 (SD=.71) (see Table 2.4). This is interpreted as occasionally observed or three out of four occasions. Advocating the learner-centered approach, teachers act as facilitators who provide students the needed opportunities for stimulating dialogues that are meaning-making, thus, ideas are constructed.

Table 2.4 Extent of Observed Learner-Centered Learning

Indicators	Mean	SD	Verbal Interpretation
1. Activities in the class mostly engage the students themselves and less of the teacher.	3.03	.82	Occasionally observed
2. Teachers act as facilitators providing opportunities for a stimulating dialogue so that meaning could evolve and be constructed.	2.94	.85	Occasionally observed
Overall	2.99	.71	Occasionally observed

On the level of usefulness of social constructivism in clinical teaching:

As to Scaffolding. Occasionally, social constructivism is useful in clinical teaching (x=2.96, SD=.58). As manifestations of this, students were asked to perform a task that has some meaning to them and with assistance from the teachers (x=3.01, SD=.78). Similarly, teachers also allow students to learn through peer mentoring, in which more advanced peers assist their low performing peers in their academic endeavors until they reach a certain level of understanding and competency (x=2.95, SD=.82), as teachers gradually withdraw assistance when the students show a certain knowledge, capability, or skills in a subject matter (x=2.95, SD=.76). (See Table 3.1)

Table 3.1 Level of Usefulness of Social Constructivism in Clinical Teaching as to Scaffolding

Indicators	Mean	SD	Verbal Interpretation
1.Teachers do something to assist students to learn new concepts, principles and skills in a subject.	2.91	.81	Occasionally useful in clinical teaching
2.Teachers gradually withdraw assistance when the student shows certain knowledge and capability or skills in a subject matter.	2.95	.76	Occasionally useful in clinical teaching
3. Teachers allow students to learn from other more knowledgeable, skillful, and competent and more advanced peers until they reach a certain level of understanding and skills.	2.95	.82	Occasionally useful in clinical teaching
4. Students are asked to perform a task that has some meaning to the student and with assistance from the teachers.	3.01	.78	Occasionally useful in clinical teaching
Overall	2.96	.58	Occasionally useful in clinical teaching

As to Social Interaction and Cultural Setting. Likewise, occasionally, social constructivism is useful to clinical teaching (x=2.96, SD=.58). This means that for the students, it is occasionally useful for teachers to recognize the cultural diversity of the class, specifically, ethnicity (x=2.93, SD=.77), respect of cultural diversity (x=3, SD=.77), the allowing of students to talk about themselves as well as they talk about the subject matter of the day (x=3, SD=.79), and the assurance that students critically think through the promotion of discussion and dialogue in the class (x=2.93, SD=.83). (See Table 3.2)

Table 3.2 Level of Usefulness of Social Constructivism in Clinical Teaching as to Social interaction and Cultural Setting

Indicators	Mean	SD	Verbal Interpretation
1. Teachers recognize the cultural diversity of the class specifically ethnicity.	2.93	.77	Occasionally useful in clinical teaching
2. Teachers respect cultural diversity of the class particularly ethnicity.	3	.77	Occasionally useful in clinical teaching
3. Teachers allow students to talk about themselves as well as they talk about the subject matter of the day.	3	.79	Occasionally useful in clinical teaching
4. Teachers ensure that students critically think through the promotion of the discussion and dialogue in the class.	2.93	.83	Occasionally useful in clinical teaching
Overall	2.96	.58	Occasionally useful in clinical teaching

As to Cooperative Learning. This study (see Table 3.3) also suggests that social constructivism is occasionally useful in clinical teaching (x=3.01, SD=.69). In this context, teachers devise plans for the students to interact with each other with what they think (x=3.02, SD=.79), and allow students to work with other students in achieving a particular objective (x=3, SD=.83).

Table 3.3 Level of Usefulness of Social Constructivism in Clinical Teaching as to Cooperative learning

Indicators	Mean	SD	Verbal Interpretation
1. Teachers devise plans for the students to interact with each other with what they think.	3.02	.79	Occasionally useful in clinical teaching
2. In the class, teachers allow students to work with other students in achieving a particular objective.	3	.83	Occasionally useful in clinical teaching
Overall	3.01	.69	Occasionally useful in clinical teaching

As to Learner-Centered Learning. Table 3.4 implies that social constructivism is occasionally useful in clinical teaching (x=3.04, SD=.68). Teachers maximized the involvement and engagement of students in their learning, and lessened that of the teacher (x=2.99, SD=.81) as teachers only acted as facilitators (x=3.09, SD=.82).

Table 3.4 Level of Usefulness of Social Constructivism in Clinical Teaching as to Learner-Centered learning

Indicators	Mean	SD	Verbal Interpretation
1. Activities in the class mostly engage the students themselves and less of the teacher.	2.99	.81	Occasionally useful in clinical teaching
2. Teachers act as facilitators providing opportunities for a stimulating dialogue so that meaning could evolve and be constructed.	3.09	.82	Occasionally useful in clinical teaching
Overall	3.04	.68	Occasionally useful in clinical teaching

On the difference in the extent of observed practice of social constructivism (scaffolding) in clinical teaching when grouped according to profile variables and academic performance

Table 4. Difference of Practiced Scaffolding when Grouped According to Profile Variables and academic performance

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender (Mean-M:2.81, F:3.05)	-3.63	356	.000	Significant	Reject Null Hypothesis
Age	4.41	357	.001	Significant	Reject Null Hypothesis
Discipline/Area	11.41	357	.000	Significant	Reject Null Hypothesis
Academic Performance	2.89	357	.022	Significant	Reject Null Hypothesis

Table 4 shows that all the variables in this study have an influence on how scaffolding has been practiced by different programs. Gender (z=3.63, df=356, p=.000), age (F=4.41, df=357, p=.001), discipline/area (F=11.41, df=357, p=.000), and academic performance of students (F=2.89, df=357, p=.022) significantly affect the extent to which scaffolding is practiced in school. For instance, female students believed that scaffolding is, indeed, practiced significantly more (x=3.05) than how males believed (x=2.81). Older students also believed that scaffolding is practiced. Other students coming from different disciplines have different perceptions and beliefs about the extent to which scaffolding is practiced. People with different academic performance also believe differently when asked about their experiences with scaffolding.

On the significant difference in the extent of observed practice of social constructivism (social interaction and cultural setting) in clinical teaching when grouped according to profile variables and academic performance

It is implied in Table 5 that except age (F=2.03, df=356, p=.000), variables such as gender (z=-4.50,df=356,p=.000), discipline/area (F=16.28, df=357, p=.000), and academic performance (F=6.89, df=3.57, p=.000) influence significant differences on the observed practice of social constructivism as to social interaction and cultural setting, thus, the hypothesis is rejected.

Table 5. Difference of Observed Practice Social Interaction and Cultural Setting when Grouped According to Profile Variables and Academic Performance

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-4.50	356	.000	S	Reject Null Hypothesis
Age	2.03	357	.074	NS	Retain Null Hypothesis
Discipline/Area	16.28	357	.000	S	Reject Null Hypothesis
Academic Performance	6.89	357	.000	S	Reject Null Hypothesis

On the significant difference in the extent of observed practice of social constructivism (cooperative learning) in clinical teaching when grouped according to profile variables and academic performance

Table 6. Difference in the Observed Practice of Cooperative Learning when Grouped According to Profile Variables and Academic Performance

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-3.73	356	.000	S	Reject Null Hypothesis
Age	1.45	357	.207	NS	Retain Null Hypothesis
Discipline/Area	7.37	357	.000	S	Reject Null Hypothesis
Academic Performance	1.50	357	.202	NS	Retain Null Hypothesis

Table 6 demonstrates that age (F=1.45, df=357, p=.21) and academic performance (F=1.50, df=357, p=.20) do not necessarily affect any difference on the level of practiced cooperative

learning in clinical teaching. On the contrary, gender (z=-3.73, df=356, p=.00) and discipline/area (F=1.50, df=357, p=.20) yield significant difference.

On the significant difference in the extent of observed practice of social constructivism (learner centeredness) in clinical teaching when grouped according to profile variables and academic performance

Table 7. Difference in the Observed Practice of Learner Centeredness when Grouped According to Profile Variables and Academic Performance

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-2.98	356	.003	S	Reject Null Hypothesis
Age	1.02	357	.405	NS	Retain Null Hypothesis
Discipline/Area	8.59	357	.000	S	Reject Null Hypothesis
Academic Performance	2.09	357	.082	NS	Retain Null Hypothesis

It can be gleaned in Table 7 that observed practice of learner centeredness varies significantly according to profile variables such as gender (z=-2.98, df=356, p=.003) and discipline/area (F=8.59, df=357, p=.00), but unlike in other variables such as age (F=1.02, df=357, p=.41) and academic performance (F=2.09, df=357, p=.08).

On the difference in the extent of perceived usefulness of social constructivism (scaffolding) in clinical teaching when grouped according to profile variables and academic performance

Table 8. Difference in the Extent of Perceived Usefulness of Scaffolding in Clinical Teaching

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-2.28	356	.023	S	Reject Null Hypothesis
Age	.631	357	.676	NS	Retain Null Hypothesis
Discipline/Area	9.05	357	.000	S	Reject Null Hypothesis
Academic Performance	2.12	357	.078	NS	Retain Null Hypothesis

Table 8 shows that gender (z=-2.28, df=356, p=.02) and discipline/area (F=9.05, df=357, p=.00) results in a significant difference on how students perceived the usefulness of scaffolding in clinical teaching, while age (F=.63, df=357, p=.68) and academic performance (F=2.12, df=357, p=.08) do not show any difference statistically.

On the difference in the extent of perceived usefulness of social constructivism (social interaction and cultural setting) in clinical teaching when grouped according to profile variables and academic performance.

Table 9. Difference in the Extent of Perceived Usefulness of Social Interaction and Cultural Setting in Clinical Teaching

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-3.91	356	.000	S	Reject Null Hypothesis
Age	1.65	357	.146	NS	Retain Null Hypothesis
Discipline/Area	7.42	357	.000	S	Reject Null Hypothesis
Academic Performance	2.89	357	.022	S	Retain Null Hypothesis

With the exception of the age demographic variable, gender (z=-3.91, df=356, p=.00), discipline/area (F=7.42, df=357, p=.00), and academic performance (F=2.89, df=357, p=.02) yielded a significant difference in the extent of perceived usefulness of scaffolding in clinical teaching. Thus, the null hypothesis is rejected.

On the difference in the extent of perceived usefulness of social constructivism (cooperative learning) in clinical teaching when grouped according to profile variables and academic performance

Table 10. Difference in the Extent of Perceived Usefulness of Cooperative Learning in Clinical Teaching

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-2.69	356	.007	S	Reject Null Hypothesis
Age	.862	357	.507	NS	Retain Null Hypothesis
Discipline/Area	8.88	357	.000	S	Reject Null Hypothesis
Academic Performance	3.47	357	.009	S	Retain Null Hypothesis

It can be gleaned from Table 10 that age is not a factor that varies how the participants perceive the usefulness of cooperative learning in clinical teaching. But gender (z=-2.69, df=356, p=.007), discipline/area (F=8.88, df=357, p=.00), and academic performance (F=3.47, df=357, p=.009) do promote significant difference.

On the difference in the extent of the perceived usefulness of social constructivism (learner-centeredness) in clinical teaching when grouped according to profile variables and academic performance

Table 11. Difference in the Extent of Perceived Usefulness of Learner Centeredness in Clinical Teaching

Profile Variables	Z/F – Value	Df	p-value	Verbal Interpretation	Decision
Gender	-1.92	356	.056	NS	Retain Null Hypothesis
Age	.957	357	.444	NS	Retain Null Hypothesis
Discipline/Area	4.93	357	.000	S	Reject Null Hypothesis
Academic Performance	2.48	357	.044	S	Retain Null Hypothesis

Table 11 shows that discipline/area (F=4.93, df=357, p=.00) and academic performance (F=2.48. df=357, p=.04) significantly caused a difference on how the participants perceived the usefulness of learner-centeredness in clinical teaching. Gender and age did not show any differences of perceived usefulness.

Conclusions and Recommendations

This study suggests that:

1. Students believe that social constructivism is occasionally useful in clinical teaching.

2.1 Gender, age, discipline and academic performance affect students' observation of the application of scaffolding in clinical teaching.

2.2 Age does not affect students' observation of the practice of social interaction in clinical teaching but gender, discipline, and academic performance do.

2.3 Gender and discipline do affect how students observe the practice of cooperative learning and learner-centeredness, but age and academic performance do not.

2.4 Gender and discipline do affect how students perceive scaffolding as useful in clinical teaching, although age and academic performance do not.

2.5 Gender, discipline, and academic performance influence how students perceive social interaction and cultural setting and cooperative learning as useful in clinical teaching.

2.6. Discipline/area and academic performance affect how students perceive learner-centeredness is useful in clinical teaching, while age and gender do not. .

3. Practices of social constructivism in clinical teaching are highly observed by students because these manifest in the educational environment. The more that a teacher practices social constructivism, the more that it promotes observable manifestations of a social constructivist environment.

4. Likewise, practice or application of social constructivism in clinical teaching promotes positive perceptions about its usefulness in clinical teaching. Students may appreciate social constructivism better if teachers maximized its use in clinical teaching.

The following are recommended:

1. Regular curriculum review and evaluation can be done to determine ways to improve students' academic performance.
2. Fully integrate scaffolding, social interaction, cultural setting, cooperative learning, and learner-centeredness across the curricula of health sciences programs.
3. Religiously monitor the implementation of social constructivism, focusing on how the students accept it and their academic performance.
4. After integration and implementation, conduct evaluation and comparative researches about the impact of social constructivism in each program's curriculum.

References

[1] S. DeYoung. *Teaching Strategies for Nurse Educators*. New Jersey: Pearson Education, Inc., 2003, pp.235-238, 2003.

[2] G. Light, R. Cox, and S. Calkins. *Learning and Teaching in Higher Education: The Reflective Professional*, 2nd ed., London: SAGE Publications Ltd., 2009.

[3] M. Olssen, Mark. "Radical constructivism and its failings: Anti-realism and individualism." *British Journal of Educational Studies*, 44(3), 275-295.1996.

[4] J. Boyle and D. Scanlon. Methods and Strategies for Teaching Students with Mild Disabilities: A Case-Based Approach. Belmont, CA: Wadsworth Cengage Learning, 2010.

[5] M. Poplin. "Holistic/Constructivists Principles of Teaching/Learning Process: Implications for the Field of Learning Disabilities" *Journal of Learning Disabilities*, 7(21): 401-16, 1988.

[6] W. Windschitl. (2002). "Framing constructivism in Practice as the Negotiation of Dilemmas: An Analysis of the Conceptual, Pedagogical, Cultural, and Political Challenges Facing Teachers," *Review of Educational Research*, 72(2), 131-175, 2002.

[7] J. Piaget, J. The equilibration of cognitive structures: The central problem of intellectual development. T. Brown and K. L. Thampy (Trans.), Chicago: University of Chicago Press, 1985.

[8] J.S. Brown, A. Collins, and P. Duguid. "Situated cognition and the Culture of Learning" *Educational Researcher*, 18(1), 32-42, 1989.

[9] K. Powell and C.J. Kalina. *"Cognitive and Social Constructivism: Developing tools for an Effective Classroom" Education*. 130(2): 241-50, (2009).

[10] L. Vygotsky. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press, 1978.

[11] R.E. Slavin. (2006). *Educational psychology: Theory and practice*, Eight Edition. Boston: Pearson, 2006.

[12] Y.V. Karpov and J.D. Bransford (1998) "Two Ways to Elaborate Vygotsky's Concept of Mediation." *American Psychologist*, 30, 61-66, 1998.

[13] A. Woolfolk. (2004). *Educational psychology*. Boston, Massachusetts: Pearson Allyn and Bacon, 2004.

[14] D. Hamman, J. Berthelot, J. Saia, and E. Crowley. "Teacher's Coaching of Learning and its Relation to Students' Strategic Learning. *Journal of Educational Psychology*, 92(2), 342-348, 2000.