Pharmacy Education, 2017; 17 (1) 125 - 135

Liminal adjustment experiences of pharmacy students: A grounded theory analysis

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Abstract

Prevailing literature presented how adjustment to college and its domains has been progressively explored in higher education. However, studies supported by Turner's liminality in exploring undergraduate students' adjustment in pharmacy education remains a research blank spot. This paper aimed to explore the processes describing how pharmacy students adjust to their college education. Semi-structured interviews and essay writing were conducted to gather pertinent data and the transcripts were analysed using the Straussian approach of grounded theory. In-depth analysis of field texts generated The Roadmap Model of Student Adjustment which represents the phases of starting-off (initial adjustments in academic demands, socialisation, emotions), strategising (strategies to improve academic performance, socialise and participate, support emotions), and settling (progress in academics, expansion in one's connections, developed attitudes and university attachment). Findings of this paper can contribute to the enhancement of pharmacy curriculum and expand higher education literature describing pharmacy students' liminal adjustment experiences.

Keywords: *Adjustment, Grounded Theory, Liminal Space, Liminality, Pharmacy*

Introduction

Adjustment is defined as 'the psychological process of adapting to, coping with, and managing the problems, challenges, and demands of everyday life' (Simons *et al*., 1994 cited by Clinciu & Cazan, 2014: p.655). In the field of higher education, adjustment to college indicates the extent to which students 'quickly and effectively adapt' to diverse encounters in the new academic setting (Crede & Niehorster, 2012: p.135). It is categorised into academic, social, personal-emotional adjustment, and institutional attachment (Baker & Siryk, 1984 cited by Crede & Niehorster, 2012) demonstrating how students adapt to academic demands, social structures of the setting, stress or reactions to college environment, and identification and emotional attachment to the university, respectively. Thus, college adjustment is multi-dimensional that students may be well-accustomed on one domain and scantily on another (Crede & Niehorster, 2012).

Notably, previous studies revealed how college adjustment constructs were positively related with other variables. In fact, in a meta-analytic review of the domains of adjustment to college and its relationship with specific factors denotes strong associations with core self-evaluations, social support from faculty and institution, stable attributes, affective state, and retention status (Crede & Niehorster, 2012). Likewise, being less abstract, emotionally stable, and socially bold resulted to better adjustment in terms of academic, social, and institutional attachment as mediated by students' perceptions of social support (Lidy & Kahn, 2006). Also, self-esteem, emotional intelligence, perceived stress, social support (Salami, 2011), and proactive and preventive coping (Gan *et al*., 2010) were noted to predict adjustment. Specifically, academic adjustment was found to be related to overall grade point average, conscientiousness, and stress (Crede & Niehorster, 2012); social adjustment with institutional attachment, extraversion (Crede & Niehorster, 2012), social media (Gray *et al*., 2013), social development goal (Shim & Ryan, 2012), and quality of mentoring relationships (Larose *et al*., 2005); personal-emotional adjustment with emotion-focused coping, utilisation of counselling services, and depression (Crede & Niehorster, 2012); and institutional attachment with quality of mentoring relationships (Larose *et al*., 2005).

Existing evidence suggests theoretical frameworks underpinning adjustment of undergraduate students. For instance, relationships between college adjustment and psychosocial factors, such as emotional intelligence, self-esteem, social support, perceived stress (Salami, 2011), and self-efficacy were anchored on Bandura's social cognitive theory (Ramos-Sanchez & Nichols, 2007).

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ISSN 1447-2701 online

Also, association between perfectionism and psychosocial adjustment was premised on Stoeber, Stoll, Pescheck, and Otto's multifunctional model of perfectionism (Chang *et al*., 2011). However, studies supported by Victor Turner's liminality in exploring undergraduate students' adjustment in pharmacy education remains a research blank spot. Liminality, an intermediate stage in the rites of passage (van Gennep, 1960; Turner, 1969), is a state which represents a neophyte or liminal entity in a 'neither here nor there' condition (Turner, 1969: p.95) and where transformation and acquisition of new knowledge, status, and identity takes place (Meyer & Land, 2005). Investigating students' liminal space has been a prevailing research topic in a number of quality scholarly journals connecting it to students' process of learning and transition experiences in the university (Palmer *et al*., 2009; Cook-Sather, 2006).

This grounded theory research intended to explore the processes on how a select group of graduating pharmacy students from two universities in Manila, Philippines adjust to their college education. Findings of this qualitative study can contribute to higher education literature focusing on health professions students' liminal experiences and utilising grounded theory analysis in understanding students' adjustment in their learning environment, particularly in pharmacy education. Similarly, the findings can provide valuable insights in generating models which depict students' collective adjustment experiences and in supporting the enhancement of pharmacy curriculum by affording interventions toward the formation of meaning-oriented future pharmacists with affirmative social support system.

Methods

Research Design

In this research, a grounded theory design was utilised. Developed by Glaser and Strauss in 1967, grounded theory is a systematic, iterative, and comparative approach (Strauss & Corbin, 1994; Bryant & Charmaz, 2007; Grbich, 2013) with the purpose of generating substantive or formal theories (Lempert, 2007; Grbich, 2013;) grounded on participants' experiences.

Selection and Study Site

Using purposive and theoretical sampling, a total of 28 graduating pharmacy students, from two universities (private and state institutions) in Manila, Philippines, who completed their internships and were involved in curricular and extra-curricular activities took part in the study. Seven students from each of the following programmes were selected: four-year Bachelor of Science (BSc.) in Pharmacy, five-year BSc. in Pharmacy, five-year BSc. in Pharmacy major in Clinical Pharmacy, and five-year BSc. Industrial Pharmacy.

Instrumentation and Data Collection

After the respondents signed the informed consent form to signify their voluntary participation, they were asked to complete a robotfoto, a Dutch term describing a preliminary identity sketch (Kelchtermans & Ballet, 2002). It was utilised to obtain the selection's demographic profile and comprised of gender, age, year level, programme of study, internships, student activities, and awards. Then, the audio-recorded semi-structured interviews, which lasted for 45 to 90 minutes, were conducted to capture the information-rich experiences of the respondents and were guided by an aide memoir consisting of key questions such as 'How did you engage yourself in improving your academic performance?', 'How did you mingle with your classmates or block mates?', and 'Can you narrate your experiences that can represent that you have been emotionally attached to the college or university community?'. Finally, they completed the essay forms, guided by open-ended questions such as 'Can you cite specific emotions that you experienced in your journey as a pharmacy student?', and those were collected on an agreed schedule.

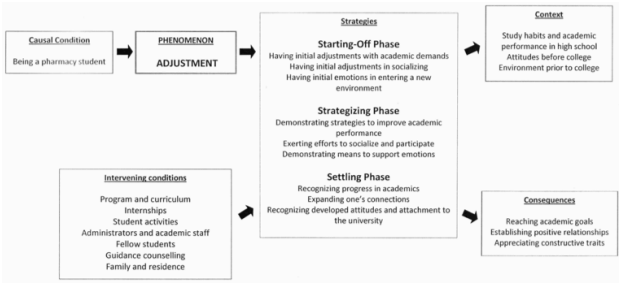
Ethical Considerations

Before data collection, an ethics review approval was obtained from the University of Santo Tomas Graduate School Ethics Review Committee and permission was sought from the Deans of the colleges of pharmacy to conduct the study. Details of the informed consent form, adapted from the World Health Organization (2014), were discussed with the respondents and afterwards their consents were obtained. The audio-recording of interviews was with the permission of the respondents and only the researchers had access to the interview and essay files. Codes were utilised when citing the actual statements of the respondents to maintain confidentiality.

Mode of Analysis

Field texts were produced by transcribing the audio-recorded interviews and essays verbatim and subjected to spot-checking. Then, these were analysed using the Straussian approach of grounded theory by individually subjecting to open, axial, and selective codings after intensive reading and re-reading (Heath & Cowley, 2004). During open coding, the verbalisations in each transcript were subjected to line-by-line coding and constant comparison was conducted until categories were developed. Categories were clustered in axial coding (Figure 1) and selective coding was performed until a core category emerged and only the related data to it were coded. Constant comparison until the concept reached theoretical saturation (Glaser & Strauss, 1976 cited by Dey, 2007) and theoretical integration through sorting of memos until the development of theoretical framework were conducted. Dendrogramming was used during analysis until inductively developing a theory (de Guzman *et al*., 2013).

Figure 1: Axial Coding Paradigm for Student Adjustment



Additionally, member checking by communicating the findings to the respondents (Lincoln & Guba, 1985 cited by Bloomberg & Volpe, 2012; Lietz *et al*., 2006), dialogue with the other researcher (Lincoln & Guba, 1985 cited by Bloomberg & Volpe, 2012), and triangulation (Koch *et al*., 2013) through essay writing were conducted to establish trustworthiness of the data. Also, reflexivity (Doyle, 2013), resonance of the research (Tracy, 2010), horizontalisation (Stelter, 2010), and bridling (Vagle *et a*l., 2009) were considered throughout the analysis.

Results

Utilising a grounded theory design, this research explored the processes on how a select group of pharmacy students adjust in their college education. A total of 28 graduating pharmacy students, who were mostly 21–22 years of age (71.4%) and female (64.3%), participated in the study (Table I). Majority were enrolled in the five-year pharmacy programmes and in their fifth year level (75%). With completed internships in the community, hospital, and industrial pharmacy settings (100%), most of them were involved in college-wide activities (78.6%) while a certain number of respondents were officers and members of student organisations and received academic awards (42.9%).

Through an in-depth analysis of the interview and essay field texts of pharmacy students, The Roadmap Model of Student Adjustment emerged (Figure 2). The generated model, grounded on the respondents' collective experiences, depicts starting-off, strategising, and settling phases. This roadmap illustrates students' adjustment from one point to another as they reach the end of their liminal journey.

Starting-Off Phase

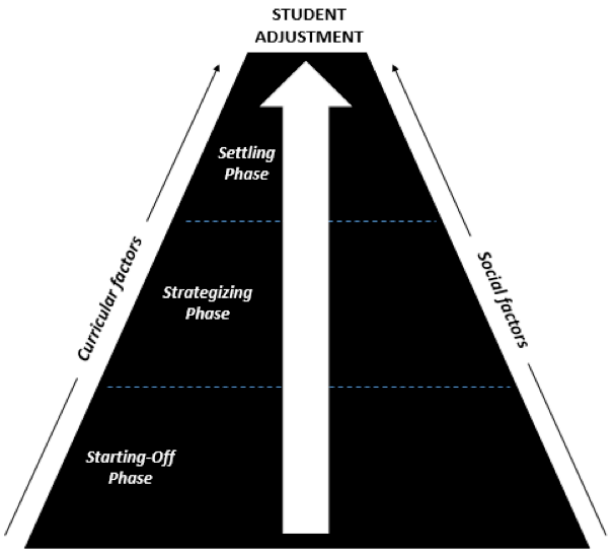
At the beginning of the interview, it is interesting to note how the respondents reminisced their study habits and academic performance prior to college and eagerly shared that some of them were very competitive, grade conscious, focused, and diligent in studies and some were just studying a night before the exams, neither

Table I: Demographic Profile of Pharmacy Students (n = 28)

Profile	n (%)
Age	
19 years old	3 (10.7%)
20 years old	5 (17.9%)
21 years old	10 (35.7%)
22 years old	10 (35.7%)
Gender	
Male	10 (35.7%)
Female	18 (64.3%)
Year Level	
4th year	7 (25.0%)
5th year	21 (75.0%)
Programme of Study	
BSc. Pharmacy (4 years)	7 (25.0%)
BSc. Pharmacy (5 years)	7 (25.0%)
BSc. Pharmacy major in Clinical Pharmacy	7 (25.0%)
BSc. Industrial Pharmacy	7 (25.0%)
*Internships Completed**	
Community Pharmacy	28 (100%)
Hospital Pharmacy	28 (100%)
Industrial Pharmacy	28 (100%)
*Student Activities Involved In**	
College-wide activities	22 (78.6%)
University-wide activities	13 (46.4%)
Nation-wide activities	7 (25.0%)
Organisational Positions Held	
Member	6 (21.4%)
Officer	10 (35.7%)
Member and Officer	12 (42.9%)
*Awards Received**	
academic award	12 (42.9%)
special award	10 (35.7%)
scholarship grant	10 (35.7%)

*multiple responses

Figure 2: The Roadmap Model of Student Adjustment



taking down notes nor reading in advance, and would just listen to teachers' lecture. A few of them were active in both academics and extra-curricular activities. Some came from the province and then stayed in a dormitory or apartment near their universities. Then, as they entered a new chapter, they encountered a new environment which was different from their secondary education. Their commencing experiences were influenced by curricular and social aspects. On one hand, the curricular aspect is characterised by the courses and its teaching-learning or assessment tasks and experiential trainings to enable students' understanding of their program of study. On the other hand, the social factors, represented by the activities and group of individuals within and outside the university, facilitate students' involvement in their environment.

Transitioning in the university, they were challenged with different courses in the curriculum and a number of topics, learning activities, and assessments in lecture and laboratory classes to provide them with foundational knowledge relative to their programme. Inevitably, they initially adjusted with the academic demands as most of them were shocked with the course content, schedule, and very challenging quizzes and exams and overwhelmed with tedious course tasks. They struggled in memorising pharmacy terms specifically drug names, reviewing for exams, and managing their time in studying. Some of them recalled using the same study habits they practiced in high school to obtain good scores but the results of their course exams were the exact opposite. As conveyed by one of the respondents: '*All the course materials were given to us just like in high school. But I was surprised that the exams were so difficult*'[R13]. One of them even shared: 'I *got sick because of lack of sleep due to studying'* [R26]. On the contrary, a few of them recollected that they only reviewed when there were exams, did not exert too much effort or encountered difficulties in studying their lessons, and were not surprised with the academic requirements.

Remarkably, they were provided with opportunities to socialise through encounters of college- and university-wide student activities, professors who were experts in specific fields, supportive administrators and guidance counsellors, and welcoming block mates. When asked about how they initially interacted, they were one in saying that their first group of friends were from their block or section. Interestingly, some of them already knew their classmates before the start of classes. They met during enrolment and had already became friends through social media, specifically on Facebook. Despite having initial acquaintances, some were kept company with one group only. One of them amusingly articulated: '*Before, I had this mentality that whoever would be my circle of friends at the start should be the same group until graduation*' [R17]. Some had initial company but only had casual talks with them, did not have too much interaction with block mates, and would immediately go home during free time instead of spending time with them. Adjusting in finding new friends and talking to different people, certain respondents had difficulties interacting with female or male classmates because they came from all-boys or all-girls school, respectively. Also, a few of them struggled to join classmates in group discussions. Conversely, some did not experience difficulties in adjusting with friends and managed to approach their classmates and communicate with them. As recalled by one of the respondents: '*When I was in first year, I introduced myself to my classmates and shook hands with them*' [R26]. Additionally, most of them did not participate in extra-curricular activities and some joined organisations but were not active.

Notably, as some of them lived away from their homes, they felt homesick and really missed their families while staying in the dormitory alone or with a new roommate. Some frequently travelled back to their province every weekend and talked to their family members through long distance calls. Starting to live independently, they adjusted taking care of their everyday needs. Yet, certain respondents expressed how enthusiastic they were in residing in the city and becoming independent. Likewise, one of them mentioned having separation anxieties with high school friends and felt lost in the midst of a sea of people in the first year. Some felt depressed in adjusting to the culture of their new environment. Moreover, some had uncertainties in taking the programme and fears of failing a course, felt pressured because of other classmates with good academic standing, and only accomplished things just to comply with the requirements. One student said: '*When I was in first year, I had fears and uncertainties if I was in the right programme*' [R24]. Quite the opposite, one of them shared not having frustrations compared to other block mates.

Summarily, the starting-off phase is characterised by students' initial adjustments in academic demands, socialisation, and emotions in entering the initial stage of their college education. In spite of the present intervening conditions that could provide support for them to become accustomed to their academic environment, they demonstrated a mix of positive and negative responses in their initial adjustment. As a result of their strategies, they recognised the need to study hard and change their study habits and adapt with the environment.

Strategising Phase

As the respondents had initial exposures to their new learning environment, they demonstrated strategies on how to progress with their academic journey. They dealt with various curricular tasks enabling them to learn the necessary knowledge and skills. Some of these included case analyses, research presentations, and comprehensive examinations, to name a few. With the increasing challenges related to their studies, they developed the means to improve their academic performance. When reviewing for exams, they read their notes and hand-outs several times, practiced repeat mastery, and solved more calculation problems or case studies. They intensified their study habits by reviewing the outlined topics in the syllabus, creating mnemonics, using a laptop or recording device during discussions, organising review notes,

rewriting or retyping lecture notes, searching for additional references, and initiating group reviews with classmates. As expressed by one student: '*I think I'm more of a visual learner. I would rewrite my notes and prepare reviewers*'[R7]. Likewise, they managed their time by using planners to organise schedules, reviewing ahead of time, allotting more periods and sleeping late to study, and not watching television or using social media when reviewing. Also, they showed their interest in their professional courses, topics, or activities and aimed to obtain their desired grade. At the same time, most of them prioritised academic performance over extra-curricular activities while some balanced their academics and participation in student organisations. One of them verbalised: '*I tried to find ways on how to balance my studies and involvement in the sports team*'[R27].

Moreover, their social environment offered them experiences enabling them to take part in different activities within and outside the university. This comprised of student events such as seminars, outreach programmes, general assemblies, peer tutorials, retreats, and recollection, among others; supportive professors who could relate to students and guidance counsellors who could assist with students' needs; friendly and helpful students from the same batch or higher year levels; and accommodating student interns, pharmacists and other professionals during internships. At this point, the respondents exerted efforts to socialise and participate in various activities. Primarily, they spent time with their block mates or group of friends studying, accomplishing course requirements like homework or projects, and doing a lot of enjoying things together. They interacted with students not only from their block but also from other sections and year levels as well as faculty members and administrators of their college. A few of them were able to socialise with other academic and school staff while working as a student scholar and student research assistant in the university. Also, most of them participated in student organisation events and community immersion programmes and worked with other students in organising some activities. During internships, they interacted with pharmacists and other healthcare professionals and exerted efforts to talk to student interns, not only from the same university but also from other institutions, about their school experiences as well as working with them while performing internship tasks. One of the students articulated: '*We helped each other and there was no barrier even if we came from different schools*' [R9].

Further, despite having low self-esteem and self-confidence and doubts in one's competence and decisions, they managed to motivate themselves to pass their professional courses. One shared how she reminisced about her happy experiences in the college in order to feel better. Some of them expressed seeking assistance from their professors, guidance counsellors, or friends to open up about their dilemmas or problems. As verbalised by one of the respondents: '*Sometimes, I would go to the guidance counselling office when I feel down. I didn't want to bother my parents since they were also busy so I talked to the guidance counsellor or my closest friends to ask for advice… or sometimes to our professors or advisers…*' [R27]. One further added: '*I have my friends. They cheered me up when I was downhearted*' [R2]. Meanwhile, some diverted their attention by focusing on one's studies and being busy with other activities so as not to feel homesick again.

On the whole, the strategising phase of student adjustment is typified by pharmacy students' attempts to improve their academic performance, socialise and participate in their environment, and support their emotions. Accordingly, these actions helped them to cope in the learning process and meet new people.

Settling Phase

Finally, as the respondents displayed certain strategies to improve their actions, they then came to a point of establishing themselves in their environment. It is interesting to note how the inquiry- or research-based curricular tasks and experiential trainings in different fields of pharmacy practice facilitated deeper learning in their education. They recognised their progress in their academics as they fully grasped the need to understand the concepts, not only memorise it, and comprehend the whole mechanism. They appreciated the difficult course activities and applied their curricular and experiential training experiences when answering patient case studies. Studying extensively, they observed that learned lessons were retained by them, their study habits improved, and they became more responsible, motivated, and diligent in academics. They aimed to use their knowledge in their future practice and wanted to pursue higher studies despite the difficulties they experienced in the pharmacy programme. Also, they recognised the applications of their learnings, roles of their profession, actual gaps in theory and practice, and improvements in the curriculum. Having all these in mind, they similarly realised how college education becomes a crucial step before entering a professional life and how an individual has to do their best in order to get ahead. As one student stated: '*If you want to achieve something in life, you have to work hard for it*' [R6].

Likewise, a number of student activities particularly patient-oriented community or immersion programmes, supportive academic and practitioners, and collaborative students contributed to the respondents' expanded connections in academic and experiential settings. During this phase, they shown leadership and active membership in student organisations and actively participated in college- or university-wide community or outreach programmes. Some of them did not confine themselves in their present environment but also joined organisations or events outside the university. Likewise, they developed close relationships not only with the students from their college but also widened their group of friends in other programmes. As shared by one of the respondents: '*I recently became active in organising a university-wide interprofessional event and I gained friends not only from pharmacy but also from other health professions programs in our university*' [R14]. They also stayed connected with the student interns,

preceptors, and other healthcare professionals by keeping in touch with them on social media and having some bonding time together. One student recalled: '*Even if I already completed my internship, I still had the chance to play badminton with the pharmacists and manager of one community pharmacy*' [R20]. Realising the positive effects of meeting new people, they considered friends as future connections.

Furthermore, they recognised positive personality traits developed in them as they became accustomed to their learning environment. They became more independent and responsible in their everyday lives. One of them expressed becoming religious and close to the church. They developed positivity as they appreciated the lessons learned from their personal journey, aimed to find joy in doing things, inspired to strive harder in life, and yearned for more learning experiences. Also, they acquired high levels of self-esteem represented by feeling proud of what they become and fulfilled because of their accomplishments in college. Aside from realising the established attitudes within them, they also became attached and identified themselves to their college and university. Being proud pharmacy students, they also believed to have embraced the characteristics they were expected to have as they become future graduates of their universities. As expressed by one of the respondents: '*I'm so proud every time I would say I'm a pharmacy student coming from a well-established university*'[R16]. Feeling they belonged, happy, and at home, some of them articulated their strengthened desire in taking part in their universities, not wanting to leave their *alma mater*, and pursuing higher studies in the same institution.

By and large, the settling phase of student adjustment is represented by students' recognition of their progress in academic goals, expansion in one's connections, and developed attitudes and attachment to the university. Consequently, they reached their academic goals, established positive relationships, and appreciated constructive traits.

Discussion

This qualitative study generated a model grounded on graduating pharmacy students' liminal experiences on how they adjusted to their learning environment. Utilising a grounded theory analysis, The Roadmap Model of Student Adjustment emerged and typified starting-off, strategising, and settling phases students undergo in their educational journey as they entered the programme and reached its final stage.

Starting-Off Phase

As the respondents were introduced to their new learning environment, they initially faced challenges in meeting academic demands. Encountering a number of curricular tasks, most of them struggled with the course content, examinations, schedule, study habits, and review strategies. Comparable to existing higher education research findings, students considered teaching approaches, course materials, and course work different from secondary education (Thompson, 2008; Salami, 2011). Difficulties encountered were related to the learning methods, study workload (Malinga-Musamba, 2014), homework, examinations (Hensley *et al*., 2015) as well as balancing different courses (Palmer *et al*., 2009). Students had no idea on how to study and manage their time and observed differences between their study strategies and requirements in college (Hensley *et al*., 2015). Specifically, in pharmacy literature, students practiced passive or rote learning in the early years (Taylor & Harding, 2007) and had little understanding of what it means to become a pharmacist (Noble *et al*., 2014). Hence, it is crucial to note that adjustment in academic demands encompasses how students manage their course of study, engage with the material, and exert efforts in academics (Baker & Siryk, 1999 cited by Crede & Niehorster, 2012).

Moreover, all of them had initial acquaintances while some had difficulties interacting with other students. Similar to other education research, findings also revealed how students experienced problems talking to others and making new friends (Malinga-Musamba, 2014). Typically, first year students have issues in building new relationships (Parker & Duffy, 2005 cited by Malinga-Musamba, 2014) and these connections may not be established at once (Salami, 2011). Nevertheless, some respondents managed to become friends with other students they met during enrolment through Facebook. This computer-mediated tool can possibly facilitate students' development of friendships (Gray *et al*., 2013). Additionally, most of them had less involvement in student organisations or non-participation in extra-curricular activities. Being passively involved in college social activities may result in absence of social skills as well as higher tendencies of being lonely and socially avoidant, distressed, and less confident (Baker & Siryk, 1999 cited by Malinga-Musamba, 2014). Thus, social adjustment denotes one's participation in campus activities, encounters with new people, and efforts in building friendships (Baker & Siryk, 1999 cited by Crede & Niehorster, 2012).

Further, they had different initial feelings upon entering their new environment. Some of them felt homesick as they started to live independently away from their families, had separation anxieties with high school friends and felt lost when in college, and had doubts and fears while taking the programme. Comparable findings indicate that homesickness was felt in the beginning of college life represented by missing family members and friends and frequently visiting home and communicating with them (Tognoli, 2003). Freshmen experienced friendsickness in college as described by their reluctance to make new friends and fears of not being with a group of people similar to their old friends, to name a few (Crissman Ishler, 2004). Also, students got stressed out and experienced fears in failing, resulting in disengagement in their academics to circumvent discomfort in the mean time (Hensley *et al*., 2015). Additionally, in pharmacy literature, students upon entry

in pharmacy programmes may have weak or no motivation in becoming future pharmacists (Taylor & Harding, 2007; Noble *et al*., 2014). Thus, personal-emotional adjustment involves being predisposed to emotional problems (Salami, 2011) as students faced anxieties, stress, or physical reactions to a certain extent (Baker & Siryk, 1999 cited by Crede & Niehorster, 2012). These psychological symptoms are normally experienced by beginning students, termed as first year adjustment reaction, as they get through their university life (Feldman, 2005 cited by Kneipp *et al*., 2009).

Overall, this starting-off phase describes how graduating pharmacy students initially adjusted to meeting academic demands, socialising, and dealing with their emotions when they first encountered their new learning environment. Passing through the liminal space takes time, exists as oscillative in nature, and involves emotional reactions and mimicry (Meyer & Land, 2005). Findings of this phase imply that pharmacy curriculum and educators should facilitate beginning students' engagement in academics, particularly when acquiring knowledge. Learning new concepts could be associated to a tunnel as students could possibly express not wanting to pass through it, only being compelled to do so, or giving up along the way (Land *et al*., 2014). Also, assistance should be afforded for students to confidently manage their time in accomplishing academic workloads. Besides, first year orientations or programmes should be enhanced, not only to introduce students to the academic environment, but also to encourage their social involvement in their colleges or universities. Likewise, administrators, faculty members, and guidance counsellors should initiate means or interventions for students' positive perceptions of social support from their learning environment.

Strategising Phase

During this phase, the respondents demonstrated strategies to improve their academic performance by intensifying their review strategies and study habits, having good time management, showing interest in their courses, and prioritising academics or balancing academics and social involvement in student activities. Parallel to a pharmacy education article, findings revealed how students managed their time in studying and reviewing in advance as well as comprehended their course materials and summarised it for their exams (Sansgiry *et al*., 2006). Likewise, in other higher education literature, students re-read their notes, tested themselves with practice problems or questions, had specific learning styles (Morehead *et al*., 2016), and adopted task management strategies such as preparing schedules and organising one's work (Webster & Hadwin, 2015). Remarkably, there are students who are categorised as deep memorising individuals who exerted effort in memorising but at the same time strived to understand the material as opposed to reproduction-oriented, who only utilised rote memorising or surface-oriented approach (Ferla *et al*., 2009).

Notably, they exerted efforts to socialise through spending time with their classmates or group of friends and interacting with students from other cohorts, faculty members, and administrators as well as preceptors and other student interns during their experiential placements. Prevailing research reported how college students socialised with friends when they study or eat together (Crissman Ishler, 2004), yearned to learn and work with one another, and desired to meet people and create friendships (Anderson & Carta-Falsa, 2002). Specifically, in the field of pharmacy, communication with peers afforded would-be pharmacist experiences (Noble *et al*., 2014). During pharmacy internships, students worked with preceptors and appreciated the supportive background provided to them (Noble *et al*., 2015). Student collaboration and positive student-faculty contact are among the principles for good practice in undergraduate education (Chickering & Gamson, 1987 cited by Kelley *et al*., 2009). Likewise, the study respondents participated in student activities comparable to pharmacy students' involvement in organisations presented in a recent published article (Phillips *et al*., 2015). Thus, it is essential to take notice of how social development goals, which include improvement in social relationships and interpersonal skills, support social adjustment (Shim & Ryan, 2012).

Moreover, they demonstrated means to support their emotions which were confirmed when they motivated themselves and sought assistance from professors, guidance counsellors, and friends. Related research depicted college students utilising social support strategies as they sought help from faculty members and peers to manage emotional challenges (Webster & Hadwin, 2015). Initiating help-seeking for mental well-being problems like stress, students considered opening up to their families and carefully chosen friends or seeking assistance from the student services of the institution or primary care professional to guarantee appropriate advice and professional confidentiality (Laidlaw *et al*., 2015). Also, the respondents diverted their attention to their course work or student activities to counteract homesickness. Similar to the task focus strategies reported to be demonstrated by university students, they concentrated on performance and completing their goals so as not to allow specific emotions to control them (Webster & Hadwin, 2015).

On the whole, this strategising phase depicts students' progressive efforts in improving their academic performance, socialising and participating in activities, and supporting their emotions during their stay in the university. Thus, these suggest that the curriculum and instructional strategies should carefully assist students as they grasp specific concepts. Students pass through the liminal space in varying approaches in understanding a concept in abstract and concrete levels as well as comprehending its rationale and applications (McCartney *et al*., 2009). Task management and task focus strategies should be fostered among students all throughout their college education. Likewise, social development goals should be strengthened for students to become socially

adjusted in their environment. Constant guidance should be provided to students to promote their social support strategies or help-seeking behaviours.

Settling Phase

At this point, the respondents recognised their progress in their academic goals as they fully grasped the need to understand concepts, appreciated curricular tasks, applied learning experiences, became more responsible in academics, aspired to achieve higher goals, and recognised actual pharmacy practices. Extant published paper presented how pharmacy students progressed in their learning styles from rote to deeper learning (Taylor & Harding, 2007). It is crucial to note that a deep approach in learning focused on the essential idea and was associated to positive learning outcomes (Marton & Saljo, 1976 cited by Heikkila & Lonka, 2006). Interestingly, meaning-oriented university students were described as having high self-efficacy, considered that less learning takes place when memorising (Ferla *et al*., 2009), and more success expectations and self-regulated learning approaches (Heikkila & Lonka, 2006). Hence, self-regulation in learning strongly predicted academic adjustment (Cazan, 2012). Likewise, students established new positive viewpoints on tertiary education, commitments to become successful, and valued aspirations (Hensley e*t al*., 2015). Particularly, in health professions education studies, student nurses realised the extensiveness of learning opportunities (Wieland *et al*., 2007) and pharmacy students finally recognised the essence of their profession (Noble *et al*., 2014).

Remarkably, they actively participated in and spearheaded student organisation activities and community programmes. Comparable to pharmacy education literature, students became more involved in extra-curricular activities, assumed leadership roles in university or college organisations (Kiersma *et al*., 2011; Phillips *et al*., 2015;), and active memberships in professional pharmacy organisations (Fusco *et al*., 2015). Their involvement in organisations were normally influenced by interests and networking (Fusco *et al*., 2015; Phillips *et al*., 2015). Additionally, the respondents developed close relationships not only with students and faculty in their college or universities but also in other settings. Thus, perceived social support during college transition predicted adjustment (Salami, 2011; Crede & Niehorster, 2012) particularly the social aspect as well as mediated the relationships between college adjustment aspects involving social, academic, and institutional attachment and personality factors such as social boldness, emotional stability, and abstractedness (Lidy & Kahn, 2006).

Further, recognition of developed traits, such as positivity and self-esteem, were demonstrated by the respondents. A related article presented that stable personality variables *(e.g*. self-esteem, self-efficacy, conscientiousness, internal locus of control), and affective state attributes (*e.g*. low depression, positive and low negative emotionality) were strongly connected to college adjustment (Crede & Niehorster, 2012). Moreover, they were proud of becoming pharmacy students enrolled in reputable programmes and universities and future graduates embracing the core values expected of them. Institutional attachment describes the extent to which students established emotional attachment to and identification of themselves with the university (Baker & Siryk, 1999 cited by Crede & Niehorster, 2012) and depicts satisfaction of students with their experiences in college (Salami, 2011).

By and large, this settling phase of pharmacy students' adjustment accounts for how they recognised progress in the academic goals, expanded their connections, and recognised developed attitudes and institutional attachment. Liminality involves transformations and acquisition of new knowledge, status, and identity (Meyer & Land, 2005). Findings suggest that the curricular and experiential trainings should positively cultivate the formation of meaning-oriented future pharmacists with self-regulation and optimistic perspectives toward their profession. Moreover, leadership and active involvement should be reinforced among students through further exposures in engaging activities. Positive networks among peers, academic staff, or preceptors should be strongly supported by means of promotion of interrelationships not only in the academic environment but also in experiential settings. Also, positive personality traits should be fostered among pharmacy students by means of providing specific interventions to increase coping behaviours while institutional attachment through affirmative social support system.

Conclusions

Overall, this grounded theory study yielded The Roadmap Model of Student Adjustment which represents the phases of starting-off, strategising, and settling describing the processes pharmacy students have gone through in their liminal journey. Findings of this paper highlighted how the respondents initially adjusted with the academic demands, socialisation, and their emotions, then progressively demonstrated strategies to improve their academic performance, socialise and participate, and support their emotions, and finally established progress in their academics, expanded their connections, and developed attitudes and university attachment. Significantly, this study can contribute to current higher education researches anchored on Turner's liminality, specifically the utilisation of grounded theory analysis in empirical investigations capturing pharmacy students' academic, social, and personal-emotional adjustments, and institutional attachment. Further, this research can provide essential insights toward the enhancement of pharmacy curriculum to facilitate students' adjustment in the liminal space. Pertinent findings suggest the need to develop initiatives such as supporting students' engagement in academics, social involvement, and development of social support strategies until they become meaning-oriented individuals who are actively involved in their learning environment with positive personality traits and social support system.

Acknowledgement

The corresponding author would like to gratefully acknowledge the University of Santo Tomas and the Fund for Assistance to Private Education – Private Education Assistance Committee for the dissertation grant.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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